FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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'Food-A-Rama' Set For Midwest Feed Convention

KANSAS CITY — "Food for thought—for man—for beast" will be emphasized when the Midwest Feed Manufacturers Assn. holds its 15th annual convention Feb. 15-17 at the Muehlebach Hotel in Kansas City.

The theme of this year's convention is "Food-A-Rama," and the speaking program will highlight foods—the end products of modern feeds—as well as feeds, as attention is focused on relationships between feeding and human foods and the food industry.

The program, announced this week, also will bring out some of the important developments in the feed industry and will show some of the current activities and plans of the Midwest association.

The two-day speaking program, Feb. 16-17, will include talks by representatives of the food industry, the feed and allied industries and other groups.

A board of directors meeting on Sunday, Feb. 15, will precede the convention program on Monday and Tuesday. The registration desk will open at noon Sunday.

The Monday program will include

(Turn to MIDWEST, page 73)

Dehydrated Alfalfa Price Up $5 Ton

KANSAS CITY—Shrinking inventories and excellent demand prompted dehydrators to boost prices of dehydrated alfalfa by $5 a ton this week. This puts 17% protein and 100,000 units of vitamin A bulk pellets at $60 ton, Kansas City or Omaha, with sacked meal at $65.

The production and inventory report of the Agricultural Marketing Service issued this week reflects the tightening supply situation. Disappearance of dehydrated alfalfa in December amounted to 90,000 tons, greatest in five years and a 40% increase over disappearance in the same month of 1957. Total disappearance May through December shows an increase of 104,700 tons, or 14.7% over the same period a year earlier. Production for the eight-month period is down 24,500 tons, or 2.5%.

Stocks of dehydrated alfalfa on hand at producing plants Dec. 31, 1958, amounted to 272,900 tons. This is 82,800 tons less than on hand the same date in 1957. The tightness of the situation is seen when stocks are compared with disappearances of 305,200 tons recorded in the January-April period last year, or the 268,420 tons five-year average disappearance in that period before new crop production is available.

Turkey Growers Plan To Hike Output by 5%

WASHINGTON—Turkey growers intend to produce 5% more turkeys in 1959 than they did last year, the Crop Reporting Board announced this week. Their intentions indicate increases of 16% in light breeds and 3% in heavy breeds, with heavy whites up 18% and other heavy breeds down 1%.

If these intentions are carried out, the U.S. Department of Agriculture report said, about 81.9 million turkeys will be raised, compared with 77.9 million in 1958.

All regions show planned increases except for the north Atlantic and south central regions. Increases indicated are 11% in the west north central, 8% in the east north central, 4% in the south Atlantic and 1% in the western states. The north Atlantic region expects a decrease of 2%, and growers in the south central region plan to raise about the same number of turkeys as last year. (See table.)

Heavy Breeds

Heavy breed growers show intentions of raising 67,740,000 turkeys this year—3% more than last year. Of these, 16,146,000 will be heavy whites, compared with 13,678,000 last year, an increase of 18%. According to present plans, heavy whites will account for 24% of all heavies raised in 1959, compared with 21% in 1958.

All regions show increases in heavy white breeds except the north Atlantic, where an 8% decline is intended. Increases planned are 38% in the south Atlantic, 25% in the west north central, 19% in the east north central, 16% in the West and 7% in the south central region.

Bronze and other heavy breeds are expected to total 51,594,000 turkeys in 1959, compared with 52,098,000

(Turn to TURKEY, page 77)

Pillsbury to Build Mill in Alabama

CLINTON, IOWA—The feed division of The Pillsbury Co., Clinton, has announced plans to build a $1 million push-button feed plant in Jasper, Ala., to serve the area's rapidly growing broiler-raising industry.

G. R. Peterson, general manager of the feed division, said, "Pillsbury needs a northern Alabama feed plant to support our increasing business there and to keep pace with the development of the Alabama broiler industry. Alabama is the fastest growing broiler-producing state in the country."

Jasper is located 40 miles northwest of Birmingham. Operation will be automatic, and equipment will include a six-ton horizontal mixer which the firm says is the largest single capacity mixer in the feed industry.

Capacity will be 250 tons per eight-hour shift.

The plant is expected to be ready for operation in the spring of 1960.

Record Number of Cattle on Feed Jan. 1, USDA Reports

WASHINGTON — The number of cattle and calves on feed for market in the U.S. on Jan. 1, 1959, is estimated at 6,489,000, according to the U.S. Department of Agriculture.

This was an increase of 11% from the 5,867,000 head on feed Jan. 1, 1958, and was the largest number on feed of record, USDA said.

Cattle and calves on feed in the important north central states, 4,667,000 head on Jan. 1 this year, compare with 4,367,000 a year earlier —an increase of 7%. Feeding in the west north central area was up 10%, while the east north central region was down 1% from a year earlier. Feeding in Iowa, the leading state, was up 7% from Jan. 1, 1958, while Illinois, the second ranking state, showed a 1% decrease.

Increases in other north central states ranged from 8% in Ohio to 30% in Kansas. Missouri showed no change from a year earlier, while Indiana and Wisconsin showed fewer cattle on feed. (Also see table.)

Shipments of stocker and feeder cattle into the nine Corn Belt states (for which data are available) during the period October-November were about the same as the corresponding period a year earlier. Shipments into the same states for the July-November period were also about the same as a year earlier.

Cattle on feed in 11 western states, Oklahoma and Texas on Jan. 1 totaled 1,745,000 head, 23% above the 1,422,000 head on feed Jan. 1, 1958. California, the leading western feeding state, was up 27%, while Colo-

(Turn to CATTLE, page 73)

Changes in Uniform State Feed Bill Under Review

CHICAGO—"Changes in the uniform state feed bill are under consideration. These changes will clarify its application to contract feeding, if adopted."

This was stated by members of the uniform feed bill and regulations committee at the conclusion of two recent meetings in Chicago. The committee is comprised of members of both the Association of American Feed Control Officials and American Feed Manufacturers Assn.

General consensus of committee members and others present was that contract feeding varies widely, and feed furnished under certain types of contracts should be subject to the bill. In general, it was felt the bill should apply to contract feeding only where feeders' income might be affected by composition and quality of the feed.

Proposed changes have been drafted which are being submitted to members of both associations for study and comment.

Committee members include: (feed control officials) H. H. Hoffman, Florida; A. S. Carter, Indiana; Reed

(Turn to FEED BILL, page 76)

FEEDSTUFFS *Features This Week*

FEEDING TESTS: Advice on how to conduct feeding tests is given on **page 28.**

VETERINARIAN RELATIONS: A feed firm's program of cooperation with veterinarians is outlined on **page 38.**

MERCHANDISING: How a feed firm changed emphasis and equipment to meet the demands of a changing agriculture is reported on **page 42.**

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SPECIAL ALFALFA REPORT

A special section following page 40 gives attention to the alfalfa dehydrating industry with articles on dehydrated alfalfa research, marketing and industry trends. The articles are specially prepared for the feed manufacturer and the producer, processor and seller of dehydrated alfalfa. The special emphasis section is published just prior to the annual meeting of the Alfalfa Dehydrators Assn. Jan. 28-30 at the Shamrock-Hilton Hotel in Houston, Texas. An index to the special articles may be found on page 1a of the section.

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Serving Customers' Needs

SPECIAL ATTENTION IS BEING GIVEN to dehydrated alfalfa in this issue of Feedstuffs. This has been a customary special editorial feature for the past several years, timed to coincide with the annual convention of the American Dehydrators Assn. The section, following page 40, brings up to date the progress made in improving the value of this important feed ingredient, and feed manufacturers will find in the several articles a great deal of pertinent information. Much of it appears to be the sort of data one might want to tuck away in the files for ready reference later on. (Handy hint: By removing the proper staples, the section can be lifted out intact.)

While buyers and nutritionists are generally familiar with improvements that have been built into alfalfa meal through the years to enhance both nutritional quality and physical properties of the product, a review of these achievements is appropriate. It serves to call attention not only to the product, but also to a certain degree changes that are occurring in feed formulation and marketing in general.

One certainly cannot minimize the importance of other feed ingredients which contribute greatly to the efficiency of today's formula feeds, but it is proper to observe that alfalfa meal has some special distinctions as a feed product. It supplies a variety of nutrients, and it is a product that is made specifically for feed use.

BECAUSE OF THE DISTINCTIVE NATURE of dehydrated alfalfa, the industry which produces it has been able to concentrate on tailoring its production to the needs of its customers with a directness of purpose. The industry is not without its marketing problems, and its members have from time to time faced some discouraging situations in attempting to maintain effective production and distribution at profitable levels.

These marketing problems, however, have prompted the industry to maintain constant attention to new nutritional developments and sharpened its awareness of opportunities to prove the value of dehydrated alfalfa on the basis of its economic worth in livestock and poultry rations. It is on this basis that any product must ultimately make its bid for acceptance.

The characteristics of the dehydrating industry which make it possible to zero in on the needs of its customers closely parallel the charactertistics of the feed industry. By continuing what it has been doing in the area of research and market evaluation it can expect to retain close identification with its customers' aim of better serving agriculture.

Delayed Christmas Present

SOMETHING CHEERFUL HAS HAPPENED to broiler prices recently. Instead of hanging around the loss levels of a few weeks ago they have pushed up several cents. Perhaps such a turnaround was expected by those closest to the marketing picture, but indications generally were that the first quarter of this year would be a period of continued depressed prices.

The Poultry Survey Committee in December predicted price levels for the quarter at an average of 16¢. This still may be the average, because it's early in the game, but this week the 19 and 20¢ levels reported from broiler areas may offer some hope that things won't be as bad as had been expected.

A look at the placements of chicks eight to ten weeks ago does not seem to offer a clue to the market's greater buoyancy. Placements in the week ending Nov. 15 were 27,171,000 in the 22 principal broiler areas. This level of placements was up substantially from the level in late October and the start of a fairly steady upturn in placements—an upturn which in the last couple of weeks has reached a rather dizzy figure and could point to more trouble ahead.

It begins to look as though consumption has been taking hold. Mrs. Housewife, who probably hasn't done the actual arithmetic, can put a cooked edible portion of broiler meat on the table for 80¢ if she pays 40¢ lb. for the chicken, the Poultry and Egg National Board calculates. A beef chuck roast, costing 59¢ lb., will provide a cooked, edible pound of beef at a cost of $1.51.

This leads to a guess as to the reason for the better broiler market situation, guaranteed to be strictly horseback economics. Department store sales were big during the Christmas season. The bills are tumbling in. Mrs. Housewife is looking at the broiler price tag with more than usual enthusiasm. But will she still love chicken on Valentine's Day?

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Generally slower formula feed business prevailed over the U.S. this week as almost all sections reported less demand. The slowdown came on the heels of very good business through the first half of January. It is believed that feeders have good inventories and are drawing against them now. Rough winter weather and general price resistance appear to be the reason. Prices are expected to continue about the same levels during the coming week. It is believed by most mixers that the slowdown will not be of long duration. The index of wholesale feedstuffs prices as reported by the U.S. Department of Agriculture Jan. 21 rose 2.2 points to 95, compared with 74.4 a year earlier. The feed grain index was 64.9, compared with 64.6 the week before and 61.1 a year ago. The hog-corn ratio, based on Chicago prices, dropped to 14.3 from 14.6 the previous week and 17.4 the same week a year earlier. (Feed markets in detail on pages 74-76.)

Southwest

With a few exceptions, formula feed business in the Southwest is on the slow side this week. Most mills will be operating five days, but production will not be up to capacity. Backlogs generally are slim, and unless a pick-up occurs next week, several mills will probably cut back to four days.

Several factors seem to be contributing to the slower pace. Heavy buying in December gave farmers good inventories that they are drawing against now. Also, mills recently have run out of bookings and replacement business is now being booked at higher prices. Thus, the full impact of the advanced prices is now being felt and feeders may have backed away from them. Christmas bills are also coming in now and feeders may be holding back on feed purchases so they can pay them. The weather is another factor that may be causing a slower pace. Heavy snow in the area has blocked many rural roads, making them virtually impassable for several days. Farmers are forced to draw upon their inventories and dealers have felt the slowdown. It has also been difficult for trucks to get to mills to keep dealer stocks up. Those mills that report good business this week note that it is carlot orders that are keeping them busy. Dock sales are slow.

Hog feeds are probably the best moving line, with cattle feeds also in good demand. Egg feeds are keeping up a steady pace. Broiler ration interest improved this week with prices for birds advancing. A trickle of interest in chick starter was observed by several mills.

Price lists are expected to be from $1 up to $1.50 down. Most rations will be lower since the general trend of the market was weaker.

Northwest

Strong feed demand which had marked the first half of January came to a rather abrupt end this week. Mill representatives were unanimous in reporting business was off quite noticeably.

But they were divided on their opinions regarding the outlook. Some expect further cutbacks next week. Others indicated that they feel the slump will be of short duration.

It was reported that feeders have been stocking up and are now in a position to wait for more favorable prices. Prices for the coming week will be unchanged to up slightly, however, the representatives said.

Dairy feed demand appears to be the sales leader, although it was down along with other lines. Poultry and turkey feeds are still off, but are expected to improve within a few weeks. An indication that turkey feed business in this area will be good is found in a report from the U.S. Department of Agriculture that Minnesota turkey raisers plan to raise 11,868,000 turkeys in 1959, compared with 10,340,000 during 1958. This estimate is based on their intentions reported in early January.

All mills reported cutbacks in production. One representative said orders late last week were still good, but that buyers were slow in coming in to pick them up early this week.

Northeast

There was a little letdown in formula feed sales. Improved broiler prices, a good return on milk and an about steady egg market had encouraged farmers to do a little stockpiling. They have sufficient inventories now and have leveled off their purchases.

There was some forward buying by feed dealers on the recent increase in soybean oil meal, with commitments ranging up to three or four weeks.

Dairy feeds continued to account for the bulk of the sales tonnage, followed by egg mashes, broiler feeds and chick starter feeds.

Some feed ingredients continued to move higher and some in the trade believe the market has worked itself into a vulnerable position.

Corn rose 1¢ during the week. Oats were unchanged to up ½¢ and barley and feed wheat were unchanged.

Animal tallow was quite weak at 7½¢ lb.—the lowest level in a couple of years.

Cottonseed oil meal was strong and prices are likely to hold until March. The pressure on soybean oil meal eased and 44% soy for January delivery was down $1.50 to $2, with February contracts offered at further discounts. Gluten meal advanced $2 and linseed oil meal was strong and unchanged.

Imports of fish meal are more or less satisfying the demand and the market held steady. Meat scraps were strong and up $2.50 to $5.

Gluten feed rose $2 and alfalfa meal $1 to $2. Hominy feed, brewers' grains and distillers' grains held steady.

(Turn to MARKETS, page 78)

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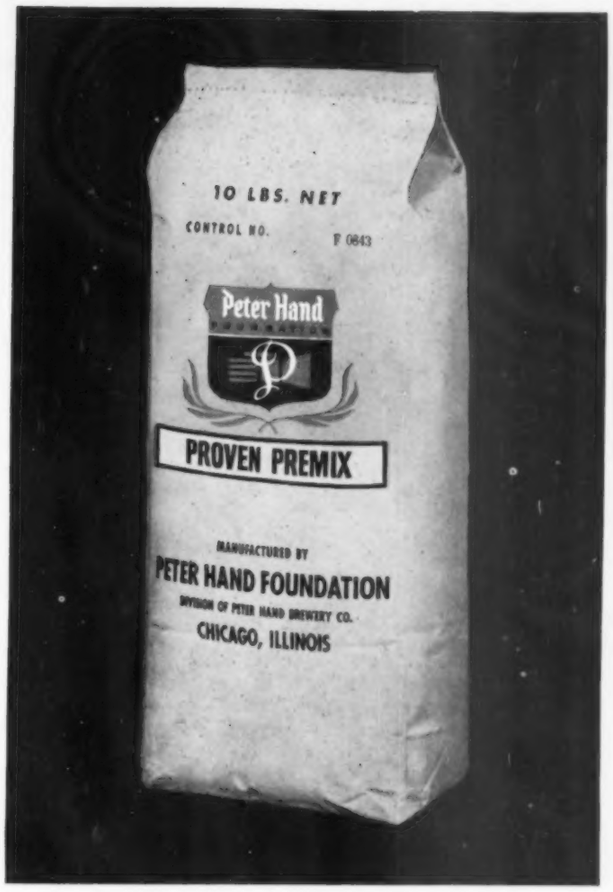

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CAPITAL COMMENT

BY JOHN CIPPERLY

Farm Legislation

WASHINGTON—Congressmen, at the opening of the 86th Congress, displayed the usual zeal of national legislators in endeavoring to correct, by legal enactments, problems of a purely economic nature — problems which have been raised and aggravated by their equally zealous predecessors in the legislature.

A sampling of legislative trends may reveal possibilities or probabilities for the agricultural, processing and marketing fronts.

Previously, The Miller has noted the rising activities of the state wheat leagues and their ventures into national organization, the purpose being to promote a wider use of American wheat throughout the world. While these organizations are not without major consequence, it has been observed in some quarters that they represent a defensive action on the part of the wheat producers to head off what is certain to be a U.S. Department of Agriculture drive in 1959 to cut back price support levels for wheat and to kill the statutory, and generous, acreage allotment for the crop. That such action will be necessary results from improved production techniques and the consequent reduction in costs.

Multi-Price System

The wheat leagues are certain, in 1959, to press their plan for the imposition of a multi-price system, based on domestic parity for that part of the wheat crop consumed in the U.S. It has been pointed out that involved in the structure is nothing more nor less than a processing tax on bread. Presumably, the proponents will ask that the processing tax, merely another aspect of the compensatory — or Brannan — payment plan be based on 100% of parity.

This plan looms important on the agricultural front and is certain to attract fringe support from many new members of Congress who feel they have a mandate to improve farm income by legislative enactment.

This approach can be indicted as the sentimental, political and emotional outlook, for it fails to pass economic tests, it has been said. The plan looks so absurdly simple that it attracts the casual and fails to bring to light the hidden aspects. And USDA officials claim that the added cost would be in the region of $500 million.

Brannan Plan Resurrection

Congress, it is suggested, will make a broad attempt to resurrect the Brannan compensatory payment plan and this could form the major part of the assault on the farm legislative front.

One bill has already been introduced by Sen. Herman Talmadge (D.

(Turn to COMMENT, page 76)

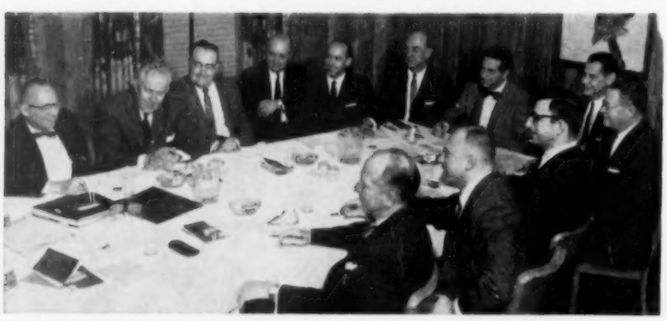
Fed Cattle Prices To Show Decline

WASHINGTON—Prices of fed cattle may decline slowly this winter and are likely to be lower than last winter. This is pointed out by the U.S. Department of Agriculture in its latest report on the livestock situation.

Prices of fed steers in December were $1 to $2 cwt. above a year earlier. The increase was made possible by a strong consumer demand for beef and by the reduced slaughter of cows and calves. These two factors will continue to be a supporting influence.

However, said USDA, because the supply of fed beef will be larger than last winter, it is doubtful that fed cattle prices will repeat last year's steady increase. The more likely prospect is that after edging to an early high, prices will slip seasonally lower.

Late winter and spring prices may be somewhat below last year, but by summer, prices may again be above 1958.



AFMA COMMITTEE—The convention program committee of the American Feed Manufacturers Assn. met in Chicago recently to plan activities for the association's 51st annual meeting May 11-13, 1959, in Chicago. Seated around the table (clockwise) are: W. T. Diamond, AFMA, Chicago; J. D. Sykes, Ralston Purina Co., St. Louis; Tom Brinegar, Feed Age magazine, Chicago; Eldon H. Roesler, Feed Bag magazine, Milwaukee; Dr. J. L. Krider, Central Soya Co., Ft. Wayne, Ind.; I. S. Riggs, AFMA chairman of the board, Quaker Oats Co., Chicago; Paul Ray, Save Way Feed Mills, Ft. Worth; W. E. Glennon, AFMA, Chicago; Don Rogers, Feedstuffs, Chicago; Oakley M. Ray, AFMA, Chicago; R. L. Kathe, AFMA, Chicago, and A. R. McFadden, National Alfalfa Dehydrating & Milling Co., Kansas City. Bad flying weather prevented other committee members from attending the meeting. Members not shown are: Frank T. Heffelfinger II, Peavey Feed Mills, Minneapolis, chairman of the committee; Norman E. Dewes, Pro-Vid-All Mills, Inc., Litchfield, Minn.; Will L. Kinard, Georgia Feed Assn., Inc., Atlanta; William C. Murphy, Eli Lilly & Co., Indianapolis, and Warren A. Ranney, Cooperative G.L.F. Exchange, Inc., Ithaca, N.Y. Plans were reviewed for the sixth National Feed Show, to be held in conjunction with the convention, at the Conrad Hilton Hotel.

Feed Group Elects Officers in Indiana

INDIANAPOLIS—Lucien A. Garner, grain department, Quaker Oats Co., Lawrenceburg, Ind., was elected president of the Indiana Grain & Feed Dealers Assn. at the group's 57th annual convention in Indianapolis. He succeeds Ralph H. Snyder, Snyder Elevator, Taylorsville, Ind.

Eugene G. Byer, Farmers Grain & Feed Co., Columbia City, Ind., was elected vice president. Fred K. Sale, Indianapolis, was reappointed executive secretary, and Dale G. Phillips, Indianapolis, was reappointed treasurer.

New directors elected for two-year terms are Mr. Snyder; M. W. Champion, Indianapolis; Russell Linton, Covington, and Nelson Igel, Washington.

Extremely bad weather and hazardous driving conditions were reported to have reduced the attendance somewhat, with registrations totaling 450. A complete report on the convention will appear in next week's Feedstuffs.

Purina Reports New Record High Tonnage

ST. LOUIS—Another new all-time high tonnage volume was reached by Ralston Purina Co., St. Louis, in the quarter ended Dec. 31. Net sales amounted to $129,999,696, and net earnings were $4,851,482.

Both figures are well above the sales of $116,023,900 and earnings of $4,121,433 for the same period a year earlier. Earnings per share of common stock amounted to 75¢ for the quarter, compared to 64¢ for that period in 1957.

In his report to shareholders, Donald Danforth, chairman of the board, noted, "This is the first quarter in our history that we have shipped at over 5-million-ton (annually) speed."

Kansas City Club Elects New Officers

KANSAS CITY—Wayne P. Anderson, Norris Grain Co., is the new president of the Kansas City Feed Club. He was elected to succeed L. E. (Bud) Cox, Bemis Bro. Bag Co., during the annual election meeting held Jan. 20 at Wolferman's Empire Room here. Despite near blizzard conditions, 37 attended.

Other new officers are Robert D. Anderson, International Milling Co., vice president; Lyman D. Ketchum, Staley Milling Co., treasurer, and Thomas E. Letch, Feedstuffs, secretary. They succeed Barney McCoy, Ralston Purina Co.; Robert Coughenour, Rodney Milling Co., and Don H. Shay, Goffe & Carkener, Inc., respectively.

Mr. Cox and Mr. Shay were elected to the executive board to succeed Loyd O. Selders, the Pillsbury Co., and Martin E. Newell, Feedstuffs. Robert Hollister, Cereal Byproducts Co., was named chairman of the board. Board members whose terms continue are Richard E. Shoop, Albers Milling Co.; E. G. Hotchkiss, Ralston Purina Co.; Bernard L. Buchner, Rodney Milling Co.; John Scherer, Carey Salt Co., and L. D. Compton, Commander Larabee Milling Co.

In the absence of Mr. Hollister, Mr. Shoop presented the retiring-president, Mr. Cox, with a golf jacket as the club's token of appreciation for his guidance and work during the past year.

ELECTED PRESIDENT

SCOTT, MISS.—Minor F. Gray has been elected acting president of Delta & Pine Land Co., one of the world's largest cotton plantations, where varied interests including meat packing, cattle and poultry processing comprise some of Mississippi's largest agricultural enterprises.

Report Planned On Feed Trade Credit for Broilers

ATLANTA—The Federal Reserve Bank of Atlanta has begun the development of a new monthly reporting series on feed trade credit for broiler production which it hopes to make available to the feed industry and public soon.

The report is titled, "Trade Credit for Broiler Production—Credit Advanced by Selected Feed Manufacturing Plants in the Sixth Federal Reserve District."

Data for the series are obtained from feed manufacturers in the Sixth Federal Reserve district who voluntarily report monthly to the bank's research department. They report data from their accounts on a reporting form sent to them by the bank.

Each firm's report is confidential, and the bank prepares a summary of the individual reports.

Arthur H. Kantner, agricultural economist at the bank, said he believes the data on trade credit, grouped into meaningful classes, will provide feed manufacturers and others with helpful information—ratios for analysis, month-to-month changes, trends, proportions and other calculations on the flow of funds into broiler production. The firms will have available facts on which to base their judgment about trade credit for producing broilers, he said.

Before the report can be made generally available to the feed industry and the public, Mr. Kantner said, the series must be strengthened —it must be made more reliable and more representative.

This will require the cooperation of additional reporters, he said.

The bank is currently conducting a mail survey of feed manufacturers with feed mills in its district to ask their cooperation in reporting data on trade credit for broiler production.

"A positive response to that request should benefit the feed industry," Mr. Kantner said.

Specifide, Inc., Opens Warehousing, Mixing Plant in Des Moines

DES MOINES—Specifide, Inc., of Indianapolis, has opened a new mixing and warehousing operation here with the purchase of the Life Guard Feed Co. at 301 E. 6th Ave.

John O. Beasley, president of the company, said the new facilities were purchased to increase service to feed manufacturers in the Midwest.

The new plant currently is being used to warehouse Specifide's "Farmaceutical" additives. After extensive remodeling is completed, both custom and standard premixes will be manufactured there, the company said.

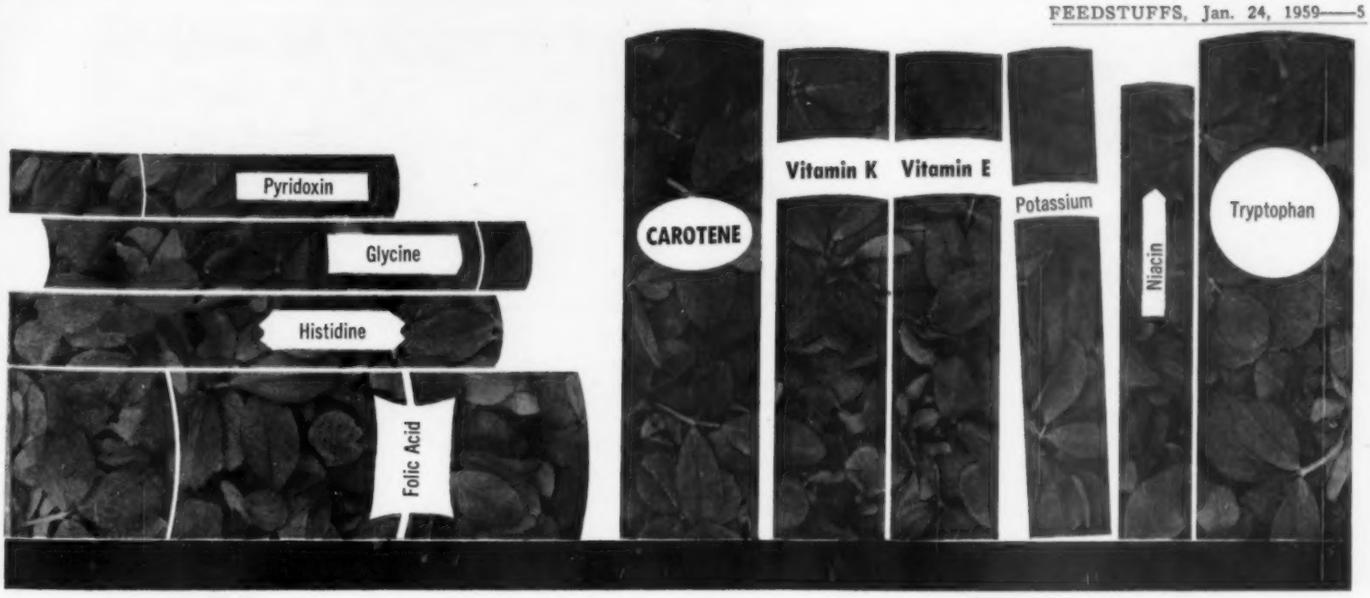
Keith C. Cummings, who now lives in Des Moines, will manage the plant.

Mr. Beasley said, "With our new facility, we will be better able to keep up with the growing needs of the feed manufacturers."

BLASTS WRECK ELEVATORS

LIMA, OHIO—Damages in excess of $100,000 were estimated following a series of explosions here recently which wrecked the Ohio Equity Exchange elevators near here. The explosion was thought to have resulted from gas building up in the elevators during the two-day shutdown for Christmas.

MANEY BROS. MILL & ELEV. CO.
Minneapolis, Minnesota
Distributors in the Upper Midwest States for
SMALL'S DEHYDRATED ALFALFA MEAL

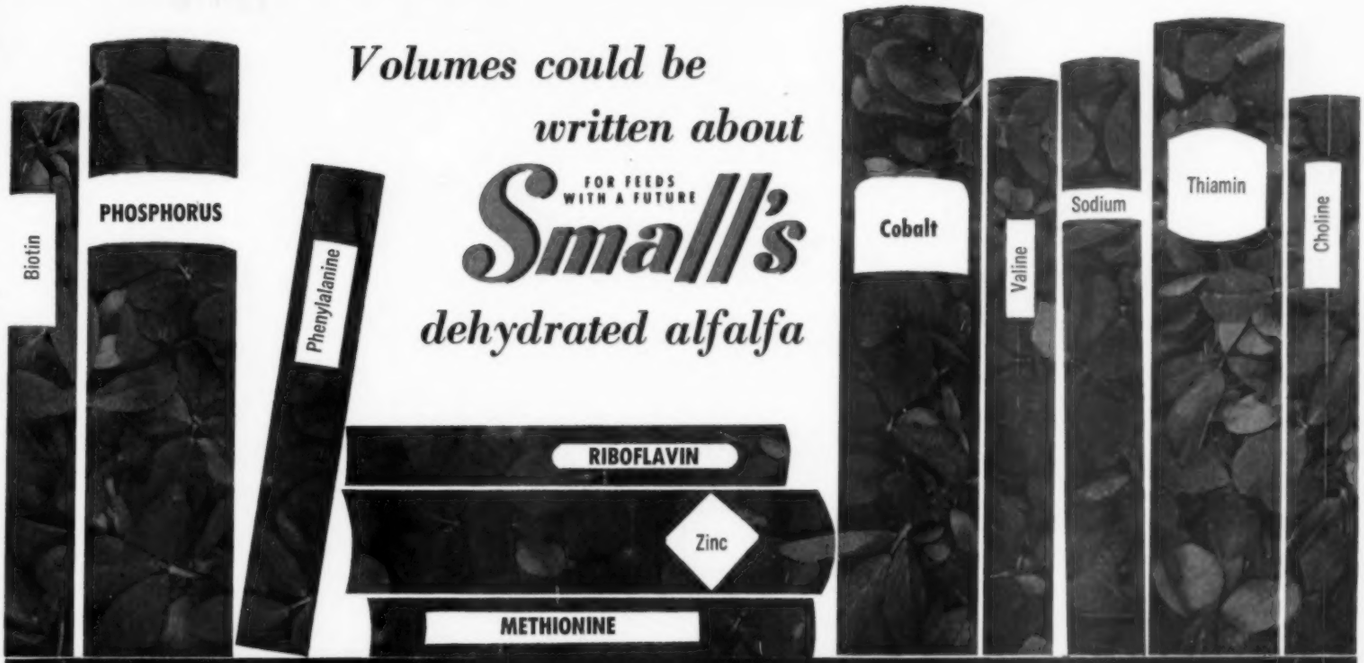


Volumes could be written about

FOR FEEDS WITH A FUTURE

Small's

dehydrated alfalfa



Volumes could be written—and have been written—about the amazing number of important nutritional elements present in the best grade of dehydrated alfalfa. Even a superficial study reveals that these numerous essential elements would be prohibitively costly if bought individually.

When you specify Small's Dehydrated Alfalfa, you get *all* these extra values in full measure, for A-D-M goes to extra expense and pains to insure that the product delivered to your door contains all the basic nutritional values of alfalfa in the field. May we tell you in more detail why Small's Dehydrated Alfalfa belongs in *your* feed? . . . and why it continues to be the first choice of value-conscious feed manufacturers everywhere?

ARCHER-DANIELS-MIDLAND COMPANY
ALFALFA DIVISION

P. O. Box 356 Kansas City 41, Mo.

Program Set for Maryland Nutrition Conference in March

COLLEGE PARK, MD.—The University of Maryland Nutrition Conference for Feed Manufacturers will be held March 19-20 in the Shoreham Hotel, Washington, D.C. Current research reports on animal and poultry nutrition will be presented by staff members of the University of Maryland and out-of-state guest speakers. The program was planned jointly by the Maryland State Feed Industry Council and the University of Maryland staff.

Guest speakers on this year's program will include: Dr. D. E. Becker, University of Illinois, who will speak on protein and amino acid nutrition of swine; Dr. H. R. Bird of the University of Wisconsin, who will discuss energy and efficiency of laying hen diets; Dr. N. L. Jacobson of Iowa State College, who will present information on the nutrition of dairy cows and calves, and Dr. Morris Cover of the University of Delaware, who will discuss the control of coccidicsis in broilers. In addition to these speakers, Dr. Robert D. McCarthy, former Maryland research worker, now at Pennsylvania State University, will discuss the role of volatile fatty acids in the synthesis of milk fat.

Maryland Speakers

Dr. Roger Hemken and William Ensor of the University of Maryland dairy department will discuss the feeding of dairy cows. One subject of importance to feed manufacturers will be the regulation of milk butterfat content by dietary means, the university pointed out.

Dr. G. F. Combs of the Maryland poultry department will present extensive research data on broiler nutrition. Dr. Combs' discussion will center around the formulation of simplified corn-soybean diets and will include such items as vitamin and amino acid supplementation and energy relationships. Data on the use of processed whole soybeans in broiler diets will also be given.

Dr. W. C. Supplee, research chemist, will discuss mineral nutrition of chicks, poults and laying hens. Dr. Supplee's work is primarily con-

(Turn to MARYLAND, page 78)

Fred M. Conklin

APPOINTED — The appointment of Fred M. Conklin as plant operations manager of Alabama Flour Mills, Decatur, Ala., has been announced by Claude I. Carter, vice president and general manager. Before joining Alabama Flour Mills, Mr. Conklin was a consultant to various feed and grain industries. He is a graduate of Purdue University, Lafayette, Ind., where he studied animal husbandry.

Albers Opens New Oregon Feed Plant

EUGENE, ORE. — Albers Milling Co., Los Angeles, held a formal opening at its new feed plant in Eugene recently. Guests were taken on a tour through the new facilities, and participated in formal opening ceremonies.

The new plant will mix all types of animal and poultry feeds and will distribute through dealers located in an area reaching about 125 miles south of Eugene, and 40 miles north in western Oregon. Feeds will be shipped from Eugene in bulk.

The heart of the plant's operation is a new, compact electronic mixing, weighing and control center which permits minute exactness in blending the various types of ingredients, a company spokesman pointed out. Up to 30 separate ingredients are used by the company for one feed.

The new plant can manufacture pelletized, as well as rolled and other types of feeds, including specialized items such as medicated feed.

Bill Davis is branch manager of the plant, and Don Parke is the plant superintendent.

Plans Announced For Montana Nutrition Event

BOZEMAN, MONT.—Some of the recent developments in livestock feeding practices and nutrition research will receive attention at the annual Montana Nutrition Conference Feb. 9-10 at Montana State College.

Integration and veterinary-feed man relationships will be among subjects other than nutrition to be discussed at the two-day event sponsored by the college, the Montana Feed Manufacturers and Dealers Assn. and the American Feed Manufacturers Assn.

A dinner meeting of the Montana association, at the Baxter Hotel, will be held Sunday evening, Feb. 8, preceding the conference.

Guest speakers from industry, agriculture and other colleges will join Montana State staff members in the speaking program.

Speakers and their topics the first day will include: Dr. K. J. Goering, Montana State, "Mustard and Rape Seed Oil Meal as Protein Sources for Rats"; Larry Michaud, Merck Sharpe & Dohme, Rahway, N.J., "Enzymes"; Dr. G. T. Davis of Montana State, "Uses of Montana-Grown Products in Poultry Feeds"; Dr. Donald Reed, Montana State, "Research Activities at the Western Regional Research Laboratory"; J. L. Van Horn, Montana State, "Management and Nutritional Studies with Range Ewes"; P. G. (Phil) Larner, Woodland, Cal., "Why Self-Feed a Complete Pelleted Ration to Sheep, Beef and Dairy Cattle?"

Other speakers on Feb. 9 will be: E. P. Smith, Montana State, "Is the Low Conception Rate of Dairy Cattle in Flathead County Due to a Phosphorus Deficiency?"; Paul W. Mattson, Morton Salt Co., Chicago, "Minerals — Common Denominators of Feed Efficiency"; Kaye Bergman, Montana State, "Comparison of Imported Hays with Those Grown in Ravilli and Missoula Counties"; Dr. Rodney Briggs, University of Minnesota, "What Is Silage?"

Tuesday Speakers

Speakers on Tuesday, Feb. 10, will include: Donald Gill, Montana State, "Rations for Feeding Steers on Irrigated Pastures"; Harley Jordan, Montana State, "Effect of Dynafac and Stilbestrol Implants with Completely Pelleted Rations for Fattening Cattle"; Dr. O. O. Thomas, Montana

(Turn to MONTANA, page 78)

Robert E. Miller Dr. John M. Snyder

Two Named to Beacon Board of Directors

CAYUGA, N.Y.—The appointment of Robert E. Miller and Dr. John M. Snyder to the board of directors of the Beacon Milling Co., Cayuga, has been announced by Stanley W. Tyler, president of Beacon. Beacon, a division of Spencer Kellogg & Sons, Inc., Buffalo, N.Y., manufactures feed for poultry, dairy cattle and other livestock in the 13 northeastern states.

Robert Miller is general sales manager for the company, a post he has held since 1957. He has been with Beacon in various sales and research capacities since 1949. He is a graduate of Rutgers University, has completed post-graduate training at Cornell University, and is a graduate of the National Sales Executives Graduate School of Sales Management and Marketing. Active in feed industry affairs, he has recently been appointed chairman of the newly formed Sales Executives Council of the American Feed Manufacturers Assn.

Dr. Snyder is director of poultry research for Beacon. A member of the poultry research staff of the company since 1954, Dr. Snyder received both undergraduate and graduate training at the University of Illinois. In earning his doctorate, he majored in animal science and specialized in poultry nutrition, studying under Dr. H. M. Scott. He has appeared before many poultry groups in the states which Beacon serves, as well as in the South and Midwest.

SUFFERS FIRE LOSS

FARMINGTON, N.H.—Eight tons of feed and 1,800 laying hens, reportedly owned by a Dover grain firm, were destroyed when fire razed a large barn located near here. Agricultural equipment was also lost in the blaze, with a loss estimated at approximately $10,000.

Merger of Egg Co-ops Now In Final Stage

WEST SPRINGFIELD, MASS. — A new and presumably final stage in the developing mergers of eight New England egg marketing cooperatives within Eastern States Farmers Exchange has begun here, according to Eastern States officials.

Managers of the eight marketing cooperatives and representation from Eastern States studied and approved the final legal document to effectuate the merger. They also set up a timetable for actions by the cooperatives.

Completion of the legal forms for merger takes the cooperatives out of the "voting in principle" stage, and now they will vote specifically "yes" or "no" on the consolidation document.

The timetable provides that, within the next month, the majority of the boards of directors of the cooperatives will vote on this final merger agreement. As boards vote to accept, they will present the agreement to their memberships which must—as cooperatives—make the final decision. Members of Eastern States have already voted its directors authority to complete its part in the merger.

The agreement provides, among other things, that Eastern States guarantees to all equity holders in the merged cooperatives individual payments equaling 100% of their equities.

The proposed plan, officials said, also provides that present egg processing plants will continue to be operated by present personnel pending further study to determine what will be the most effective in the future.

The eight cooperatives anticipating merger with Eastern States are: Brockton Cooperative Poultry Producers, Inc., Avon, Mass.; Connecticut Poultry Producers, Inc., Hamden, Conn.; Eastern Connecticut Poultry Producers, Inc., Providence, R.I.; Hamden (Conn.) Cooperative Poultry Auction, Inc.; New Hampshire Egg Producers Cooperative, Derry, N.H.; Springfield (Mass.) Cooperative Auction Marketing Assn., Inc.; Willimantic (Conn.) Poultry Assn., Inc.; Connecticut Farmers Cooperative Assn., East Hartford, Conn.

Chick Placements for Broiler Hatchery Supply Down by 4%

WASHINGTON — The indicated placement of pullet chicks for broiler hatchery supply flocks during December, 1958, was 4% off from the same month a year earlier, the U.S. Department of Agriculture has reported.

It marked the first month in 1958 that placements had not been in excess of 1957.

The placement total, which is based on reports by leading primary breeders of broiler replacement stock, was 2,147,000 chicks. The total includes pullet chicks sold during the month, plus the number of pullet chicks expected from eggs sold during the preceding month.

Conversion from eggs to expected pullet chicks is made on the basis of 125 pullet chicks per case of hatching eggs sold.

Primary breeders included in the report account for a very large percentage of the total supply of replacement pullets for broiler hatchery supply flocks, the report said. Sales of replacement pullets by these breeders provide an indication of the potential number of pullets available for addition to hatchery egg supply flocks several months before the pullet will actually move into the flocks.

The December reduction did little to change the picture for the calendar year. The year's total was 32,959,000, 27% more than the total for the calendar year 1957. (See table.)

Reductions in placements came during a month when broiler prices dropped as low as 12¢ lb. in some broiler production areas and they climaxed a trend that began in September.

September placements, though up 40% over the preceding September, were off sharply from an 88% increase in August. October and November placements continued the downward trend, with placements of 12% and 11%, respectively, over the same months of 1957.

Pullet Chicks*—Placements for Broiler Hatchery Supply Flocks (Reported by Leading Breeders)

Month	1956	1957	1958	1958 as % of 1957
	—1,000 chicks—			%
January	1,912	1,886	1,982	105
February	2,187	1,997	2,270	114
March	2,866	2,538	3,118	123
April	2,996	3,033	3,320	109
May	2,854	2,899	3,623	125
June	2,298	2,060	3,390	165
July	1,778	1,676	3,054	182
August	1,884	1,410	2,646	188
September	1,864	1,935	2,700	140
October	1,922	2,297	2,568	112
November	1,900	1,926	2,141	111
December	1,787	2,238	2,147	96
Annual total	26,248	25,895	32,959	127

*Includes expected pullet replacements from eggs sold during the preceding month at the rate of 125 pullet chicks per case of eggs.

Boosts in Chick, Poult Production Reported by USDA

WASHINGTON — The production of chicks by commercial hatcheries during December was up 16% from December, 1957, and up 52% from the 1952-56 average for the month, according to the crop reporting board, Agricultural Marketing Service, U.S. Department of Agriculture.

The USDA report noted that larger January hatches than a year ago of both broiler-type and egg-type chicks are in prospect. More eggs were in incubators on Jan. 1, 1959, for both broiler and egg-type production, than on Jan. 1, 1958.

Broiler-type chicks produced during December, which accounted for 89% of the total chicks hatched, totaled 146,387,000, compared with 126,481,000 in December, 1957. The preliminary estimate of the number of broiler-type chicks produced in 1958 totaled 1,802,932,000—up 14% from the number produced in 1957.

Egg-type chicks produced in December totaled 18,925,000, compared with 15,694,000 in December, 1957. Production for the year totaled 597,583,000—up 15% from the number produced in 1957.

Poult Production

Compared with December, 1957, heavy white breed poult production in December, 1958, was up 51%. Production of other heavy breed poults, mostly broadbreasted bronze, was down 22%. The production of heavy white breed poults totaled 1,061,000, compared with 703,000 in December, 1957. Other heavy breed poults totaled 597,000, compared with 768,000 in December, 1957. Light breed poult production during December totaled 1,105,000, compared with 617,000 in December, 1957—an increase of 79%.

Turkey eggs in incubators on Jan. 1 indicate that the number of heavy white breed and light breed poults hatched in January will be larger than in January, 1958. The hatch of other heavy breed poults, mostly broad breasted bronze, will be smaller, USDA concluded.

Revisions in Grain Standards for Corn Announced by USDA

WASHINGTON — Revisions in the grain standards of the U.S. for corn have been announced by the U.S. Department of Agriculture. The major revisions are a change in the basic method for determination of moisture content, and an increase in minimum test weight per bushel requirements in the numerical grades.

The change in the basic method will result in a net increase in the percentage of moisture determined of about one-half of one per cent. No change will be made in the maximum moisture percentages for each of the grades.

The minimum test weight will be increased from 54 lb. to 56 lb. in No. 1, and by one pound in grades No. 2, 3 and 4 and by two pounds in grade No. 5. These increases are justified by the heavier test weight of hybrid varieties of corn grown in recent years.

The changes on the whole are designed to improve the average quality of the grades of corn produced and marketed. The revised standards will become effective Oct. 1, 1959.

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NEC States Stand on Consumer Information

CHICAGO—Don M. Turnbull, executive secretary of the American Poultry & Hatchery Federation, stated in a recent letter to Lloyd H. Geil that the National Egg Council "will not engage in a consumer information program, nor will it solicit funds for this purpose." Mr. Geil is general manager of the Poultry & Egg National Board.

"PENB is the industry's established organization to carry on an aggressive consumer information program for eggs. The egg industry should take full advantage of this asset and provide investments to permit PENB to do an effective job," Mr. Turnbull's letter stated.

At its recent board meeting, L. N. Thompson, PENB president, called on all levels of the poultry industry to unify their support of PENB as the only consumer information agency serving eggs throughout the nation. Mr. Turnbull's letter lends added support to Mr. Thompson's plea for unified egg promotional activities, including the collection of funds for this purpose, within the framework of the PENB.

First activity in a new, speeded-up consumer education program is National Egg Month—March. This program will feature coast-to-coast news coverage in newspapers, magazines, radio and television. Activities will include local tie-ins, proclamations by governors and other government officials, cooperation of state National Egg Month chairmen, U.S. Department of Agriculture and state extension personnel.

13 'Egg Institutes' in Minnesota Scheduled

ST. PAUL—A series of "egg institutes" is being held in Minnesota this winter. Ten have already been held and 13 more are scheduled for the next month and a half, according to Dr. William H. Dankers, extension agricultural economist at the University of Minnesota.

Each of the events features an educational program in egg production and marketing, an egg quality show and a cake show. Dr. Dankers, other university representatives, and an official from the Minnesota Department of Agriculture, Dairy and Food will participate in the program.

Topics usually include automation in egg handling, poultry buildings and facilities, the local egg industry, poultry outlook, poultry health and marketing. Dr. Dankers conducts an egg quality demonstration at each meeting.

U.S. Department of Agriculture representatives grade the egg show entries for internal quality. Dr. Dankers; Robert Berg, university extension poultry specialist, and Theodore Thompson, state department of agriculture official, do the external and over-all grading.

The egg institutes are sponsored cooperatively by the poultry industry in the county, and the Agricultural Extension Service. Those yet to be held include: Ortonville, Jan. 27; Lakefield, Jan. 28; Sleepy Eye, Jan. 29.

Caledonia, Feb. 3; Preston, Feb. 4; Zumbrota, Feb. 5; Gibbon, Feb. 14; North Branch, Feb. 17; Cambridge, Feb. 18; Brainerd, Feb. 19; Alexandria, Feb. 24; Clarkfield, Feb. 25; and Westbrook, Feb. 26.

Swine Day Set

STORRS, CONN.—Swine Producers Day at the University of Connecticut will be held Jan. 31 under the sponsorship of the department of animal industries. Farmers, swine specialists and packers will discuss such subjects as meat-type hogs, hog marketing, management, feeding and pig parlors. The day-long event starts at 9:30 a.m.

USDA BORROWS "THE CHAMP"—Secretary of Agriculture Ezra Taft Benson (left) is shown here accepting, on behalf of the U.S. Department of Agriculture, the loan of "The Champ," educational beef exhibit, from Raymond E. Rowland, president, Ralston Purina Co., St. Louis. Shown looking over the shoulder of Mr. Benson, "The Champ" will be "a new ambassador for American agriculture" as he becomes a part of a mobile exhibit planned by the Foreign Agricultural Service for display in Italy and other European countries. The exhibit is designed to promote the effective use of feed grains and feed concentrates and to interest foreign customers in these and other U.S. farm products. The giant, life-like plastic "Champ" is 12 ft. tall, 19 ft. long and nearly 8 ft. wide.

Reporter Finds 'The Champ' Top Feed Industry Envoy

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—On a cold, clammy day this week, this reporter walked through the inside of "The Champ," a trade promotion exhibit which reveals exactly what happens to proper feed ingredients in a steer of proper breeding.

"The Champ" is an exhibit owned by the Ralston Purina Co. and devoted to the entire feed industry. It promotes better feeding of livestock primarily, but implies the obvious inference that proper feeding is good for all animals or poultry.

There were no slogans mentioned at this display, but "The Champ" is a graphic illustration of the saying that, "The best breed of animals is no better than the feed put into it."

Ralston Purina Co. has loaned its "pet"—it actually eats scientific feed preparations—to USDA for display in foreign nations. The display will show foreign producers how correctly-prepared feed ingredients make for a better animal and pay off in profits anywhere in the world. It will show them how U.S. producers make more pounds of protein food per pound of feed than is available in foreign nations.

The startling appearance of "The Champ" on the mall here, accompanied by top officials in the tough winter wind, aroused not only a big turnout of cameramen and reporters, but top brass from the USDA itself.

On hand in the freezing weather were Ezra Taft Benson, and on his right hand, Ray Rowland, president of Ralston Purina. In loaning the champ to USDA, Mr. Rowland made a gift of no small consequence, for a look at "The Champ" leads only to the conclusion that protein foods can be produced cheaper and in better quality only if all producers will use appropriate feeds.

The ultimate result will be lower prices for pork chops, broilers, and beef steak to the consumer.

This is the story I felt "The Champ" told as I walked through him on this cold morning and listened to his heart beat.

Molasses Lower As Cuban Tension Eases

NEW ORLEANS—Easing of tension in the molasses trade regarding the Cuban situation as it may affect market supplies brought a slightly weaker Gulf and Midwest market for feeding cane molasses during the week ending Jan. 20, the U.S. Department of Agriculture Molasses Market News Service here reported this week.

Demand was said to be slow to moderate in the Midwest and Gulf, but moderate to good on the east and west coasts.

A molasses importer this week reflected the lessened tension as he reported that repairs are now being made to mills and roads in Cuba, and "nearly a complete sugar crop" and a normal molasses supply are expected.

He said the outlook is still somewhat cloudy, but that Castro appears willing to do business as it has been done in the past, and "without bribes and graft."

On the basis of this, he said, he expects the market to follow its normal fluctuations in the future.

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USDA Predicts Early Drop in Prices for Hogs

WASHINGTON — Larger supplies of hogs in 1959 will have a "considerable price impact," the U.S. Department of Agriculture has predicted.

In its recent livestock and meat situation report, USDA said prices of hogs are expected to decline to a lower level early this year, and thereafter their changes probably will be little more than their usual seasonal fluctuation. The report said there is no great danger of an abrupt collapse at any one season. This prospect results from the smoother seasonal distribution of farrowings now than a few years ago.

"The early downtrend in 1959 prices will probably end in a late-winter or early-spring low. The seasonal advance during the spring will not be great, and the summer high will be considerably under the top reached last summer," the report said. "Prices will remain much below a year earlier in their fall decline. Yet, if producers do not exceed their intended farrowings, the fall low in price will almost certainly be considerably above the low point to which prices fell in December, 1955. In that month, the U.S. average price to farmers was $10.60 cwt."

The report pointed out that hog prices always move up and down quickly in response to a changing supply. One reason is that when output of pork has been reduced for some time, as was true in 1957-58, consumers tend to drift away from it, according to the report. After a large supply has been restored, experience indicates that consumers are won back only gradually. Prices can be especially sensitive to supply in the adjustment period, the report stated.

The report said market weights will tend to continue heavy and discounts fairly wide in early months of 1959.

Except in the late spring, when seasonal price advances almost always offset the disadvantage of discount for weight, it normally is hazardous to feed to heavy weight in a lower price year such as 1959, the report warned.

Joseph Burger

WASHINGTON SPEAKER — Joseph Burger, director of public relations for H. V. Nootbaar & Co., Pasadena, Cal., and a well known speaker, will be on the program of the Washington State Feed Assn. convention Feb. 12-13 at Hotel Leopold, Bellingham, Wash. Mr. Burger will discuss "How to Get Better." Being held in connection with the convention is the annual Pacific Northwest Feed Mill Production School on Feb. 11-12.

BROILER PRICES SHOW FURTHER GAIN

FAYETTEVILLE, ARK.—Demand for today's chicken meat at bargain prices has continued good, and broiler prices have shown further gains the past week. Prices at mid-week in some of the principal broiler areas were up to around 18-20¢ lb. at the farm, although some reports indicated that demand was easing and supplies were mostly adequate for trade needs. The Federal-State Market News Service here reported the following prices as of Jan. 20: Arkansas, 18¢ lb.; Georgia, 18-18½¢, mostly 18¢; Delmarva, 19¼-20½¢; Texas, 18¢; Virginia, 18-20¢; Mississippi, 18-19¢, mostly 18¢; Alabama, 18¢.

Production School Set for September

KANSAS CITY — The 1959 Feed Production School will be held Sept. 23-25 at the Continental Hotel in Kansas City.

The dates and initial program plans for the event were announced following a meeting Jan. 22 of the production school planning committee.

The principal subject at the three-day school will be pelleting. The program — including talks, specialized sessions, discussion groups, visual aids and other features — will be aimed at answering feed men's specific questions on problems and operations in pelleting various types of livestock and poultry feeds.

Other phases of feed production also will be discussed, and it is expected that a special small mill short course again will be held.

Arthur Saalfield of the Quaker Oats Co., Sherman, Texas, has been appointed chairman of the production school committee. Other members are: J. D. Johnson, General Mills, Inc., Minneapolis; Dr. John Shellenberger, Kansas State College; C. E. (Bud) Swick, Kent Feeds, Muscatine, Iowa, and Kenneth Winterscheidt, Winterscheidt Milling Co., Seneca, Kansas. Jerry Karstens, Feed Age, Chicago, and Roger Berglund, Feedstuffs, Minneapolis, are advisory members representing the trade press.

Also present for the committee meeting this week were Ray Ammon, the Quaker Oats Co., St. Joseph, Mo., president of the Midwest Feed Manufacturers Assn.; Larry Alley, Pay Way Feed Mills, Kansas City; Maurice Johnson, Staley Milling Co., Kansas City, and Lloyd Larson, Midwest association, Kansas City.

Carter Dewey Named To General Mills Post

MINNEAPOLIS — Carter M. Dewey, personnel executive at General Mills, Inc., Minneapolis, has been named to the position of assistant to the chairman of the board, G. S. Kennedy, board chairman, announces.

Mr. Dewey has been assistant to the vice president in charge of personnel administration since 1955 and general office personnel manager since January, 1958.

He joined the company in 1932 as an accountant in General Mills' Kansas City office. He became assistant chief accountant for the Sperry division and, later, chief accountant and divisional comptroller for the chemical division. Before being assigned to personnel administration, he was, for a time, divisional vice president and director of operations control for the chemical division.

He received a B. A. from the University of Illinois and a master's degree in business administration from Harvard University. In 1952 he attended an advanced executive course in business administration at Columbia University.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
November 15	1,099	382	825	797	187	654	1,293	1,871
November 22	1,075	560	818	797	189	676	1,580	1,746
November 29	1,015	584	857	861	136	736	1,405	1,551
December 6	1,042	553	856	870	143	656	1,645	1,653
December 13	1,125	567	953	943	163	696	1,598	1,743
December 20	1,169	560	911	819	155	722	1,624	1,998
December 27	1,147	601	714	743	142	665	1,692	1,852
January 3	1,211	669	873	772	149	685	2,046	1,840
January 10	1,180	531	784	737	136	765	1,880	1,838
January 17	1,251	532	585	657	182	732	1,797	1,688

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
November 15	878	574	2,294	364	5,016	201	2,648	1,727
November 22	941	468	2,359	362	5,196	192	2,685	1,796
November 29	1,008	481	2,444	369	5,320	245	2,650	1,830
December 6	1,006	506	2,439	347	5,388	249	2,628	1,903
December 13	988	490	2,475	342	5,255	237	2,773	1,972
December 20	1,076	511	2,480	361	5,734	215	2,863	2,000
December 27	1,090	562	2,081	331	5,404	211	2,366	1,944
January 3	1,014	601	2,578	324	5,862	298	2,871	1,999
January 10	1,092	557	2,407	323	5,744	255	2,904	2,051
January 17	1,016	437	2,207	320	5,825	205	2,766	1,944

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1958-59	Total 22 areas 1957-58
November 15	2,463	394	2,269	273	164	812	27,171	24,456
November 22	2,550	383	2,321	289	168	861	28,004	24,601
November 29	2,723	463	2,302	270	144	779	28,373	24,462
December 6	2,921	457	2,165	308	219	955	28,878	24,828
December 13	2,999	506	2,211	259	254	878	29,427	25,320
December 20	3,046	449	2,126	298	242	789	30,121	25,668
December 27	3,122	390	2,105	258	238	861	28,521	25,293
January 3	3,251	470	2,277	269	236	1,052	31,347	26,741
January 10	2,881	440	2,223	310	300	1,196	30,534	27,033
January 17	3,073	430	2,079	284	309	1,226	29,545	26,816

Broiler Egg Settings Show 2% Increase

SALISBURY, MD.—An increase in broiler egg settings was reported by hatcheries in 22 reporting states last week. The total was 42,990,000 eggs. This was an increase of 2% over the previous week, but a decrease of 7% from the same week a year earlier.

Increases in the number of eggs set were reported in 14 of the 22 states.

Broiler growers in the 22 states placed 29,545,000 broiler chicks, a cut of 3% from the previous week, but a boost of 10% over the same week a year earlier. Decreases were reported in 15 states.

The average price received by Delmarva growers at the farm last week was 19.5¢ lb. A week earlier the average was 17.3¢.

Delmarva growers sent 3,095,000 broilers to market during the week, according to the Maryland-Delaware Crop Reporting Service. This was 19% less than the previous week and 2% less than the corresponding week of 1958. Marketings were 95% of the number of broilers started nine weeks earlier.

Wirthmore Announces Personnel Changes

WALTHAM, MASS. — Reassignments and promotions involving four men and the appointment of another were announced recently by Wirthmore Feeds, Inc., Waltham.

A. Robert Blattner has been transferred to the product development department of Corn Products Co. in New York; Lester Whitney has shifted from Waltham to Crosby Milling Co., Brattleboro, Vt., and Roy J. Howard and Robert M. Smith have been promoted to new responsibilities at St. Albans, Vt.

Appointed by the firm was Albert Hall, Bryantville, Mass., who has been named poultry serviceman for eastern Massachusetts by the feed firm.

Mr. Blattner, a cost study specialist, will carry out similar work for Corn Products. Mr. Whitney, formerly in the engineering department, has been named assistant superintendent of the Crosby Milling Co. in Brattleboro, and Mr. Howard has been appointed assistant superintendent of the St. Albans plant.

Mr. Smith has been promoted to the post of assistant to the manager of the St. Albans Grain Co. He was formerly assistant superintendent of the St. Albans plant.

Mr. Hall will advise and assist poultry farmers in the area from Boston to Worcester and in the Clinton and Walpole areas. He was a member of the U.S. 1956 Olympics track and field team as a hammer thrower.

H. B. Juneau

Product Development, Research Division Formed by Cargill

MINNEAPOLIS—Formation of a new operating division devoted to research and product development has been announced by Cargill, Inc., Minneapolis.

Herbert B. Juneau, vice president formerly in charge of administrative services, has been named head of the new organization. He is succeeded in the services department by John C. Savage, vice president. Gerald A. Joines is company personnel director replacing Mr. Savage.

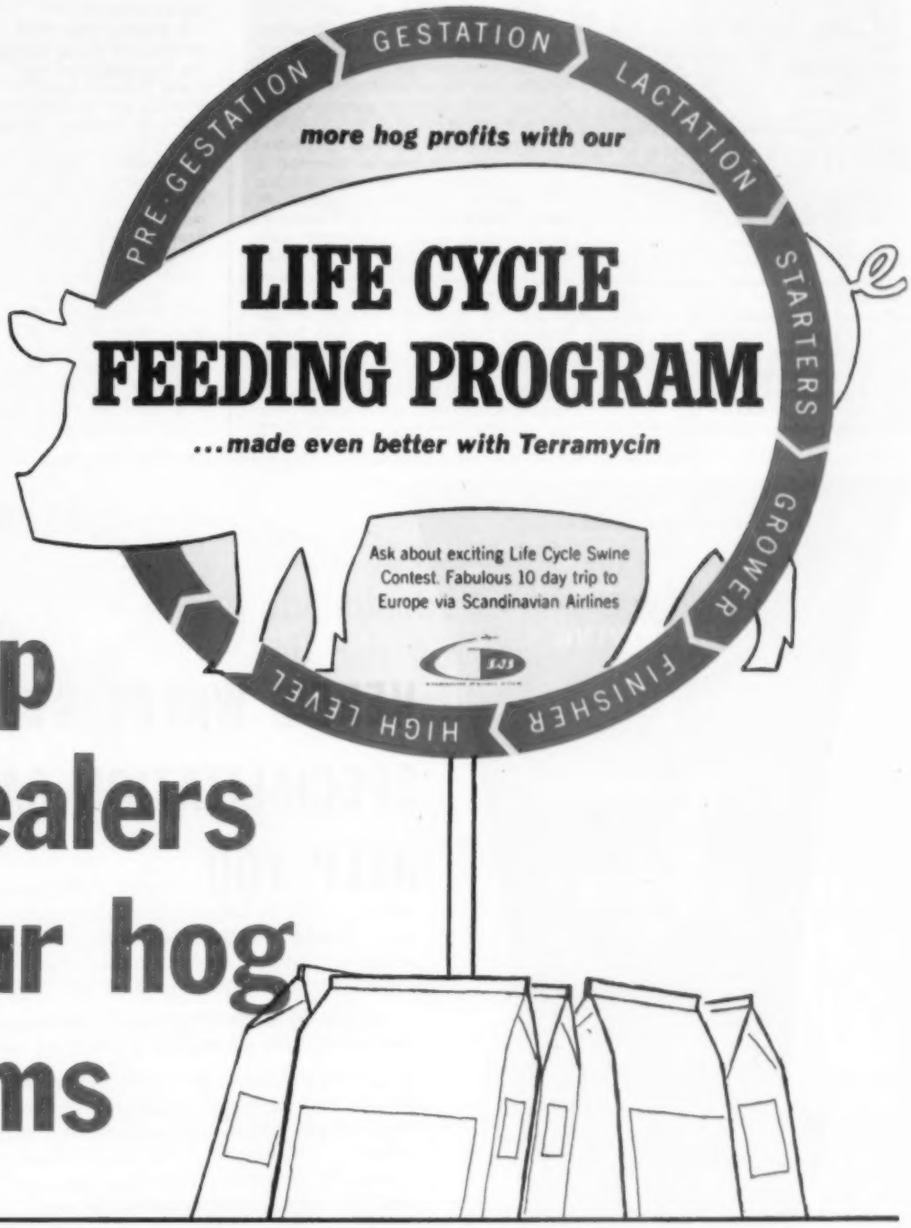
The division increases to five Cargill's major operating units. Other organizations have responsibility for: Handling, storing and merchandising of grains; manufacture and sale of prepared animal feeds (Nutrena Mills, Inc.); processing and sale of vegetable oils; and rail-truck-barge transportation of grains and other commodities (Cargo Carriers, Inc.).

Cargill MacMillan, president, said the new division's activities will include production and national distribution of agriculturally-derived products—some for industrial use and some directed to the consumer level —that do not fit readily within existing divisions. It will also be charged with research aimed at "logically related" new product development and with survey and analyses of marketing potentials in both industrial and consumer fields.

Initial components of the division include:

● Central research to continue under direction of Dr. A. Richard Baldwin, engaging in work for all divisions at Cargill's recently completed research building near Wayzata, Minn., and its near-complete 840-acre

(Turn to CARGILL, page 73)



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Northwest Feed Men Hear Talks on New Research, Feeding Developments

By ROGER BERGLUND
Feedstuffs Managing Editor

MINNEAPOLIS—Some of the new developments in swine, dairy and poultry feeding and management came in for discussion by a panel of university and industry experts at the recent convention of the Northwest Retail Feed Assn. (A story on other parts of the meeting appeared in Feedstuffs Jan. 17.)

Dr. Elton Johnson, head of the University of Minnesota poultry department, was moderator. Panel members were Dr. Robert Nesheim, swine research manager for the Quaker Oats Co., Chicago; Dr. L. E. Hanson, head of the Minnesota animal husbandry department, and Dr. W. H. Petersen, Minnesota dairy husbandry professor.

A review of the discussion follows:

New Concepts of Swine Production: Dr. Nesheim pointed out some of the new developments in swine feeding and management which are coming with greater specialization. These include:

1. Confinement Rearing. Satisfactory rations can now be formulated for confinement feeding, and returns per acre of pasture for swine are lower. Other factors in this development include more year-round production of hogs, improved sanitation and disease control and the desire for the convenience factor and easier care of the animals. Problems in confinement rearing include the initial investment for the feeder and manure disposal.

2. Multiple Farrowing. This is coming faster than many people realize, said Dr. Nesheim. Reasons for it include reduced investment cost per litter; more efficient use of labor; multiple marketing, with steadier income for the producer; results in more efficient processing and distribution of pork.

3. Feeder Pigs. The biggest share of labor in swine production is with the breeding herd and farrowing, and many farmers want to specialize in growing and finishing hogs while others can produce feeder pigs. The feeder wants: Healthy, uniform pigs; a consistent supply; stable prices; pigs ready to go—castrated, vaccinated, wormed and on feed; the right type of pig. In feeder pig management, important things to do are to isolate the new pigs, keep them comfortable, feed a stress feed with 100 gm. of antibiotic initially, and provide adequate water. Major problems with feeder pigs include disease breaks, caused by stress factors such as hauling, weaning, fighting, exposure, vaccination and castration.

4. Pelleting. There is increased interest in pelleted complete feeds for swine. This is because of faster gains and improved efficiency. Also important is the convenience factor, with bulk handling. Dr. Nesheim said there will be increased use of pelleted feeds where pelleting is economical enough and the feeds are readily available.

Swine Nutrition Research: Dr. Hanson pointed out some of the research findings reported at the recent meeting of the American Society of Animal Production and commented on some other findings. He mentioned North Dakota work showing benefits from supplementing pelleted barley rations for swine with lysine. In connection with pelleting, he noted that the biggest advantage comes with rations higher in fiber. There is no question about improving results by pelleting barley rations, Dr. Hanson said.

He also referred to an Allied Mills report on 3-week vs. 8-week weaning. In Minnesota tests, 3-week weaned pigs have not done as well as 8-week weaned pigs in the period from 8 weeks to market, while in the test reported in Chicago there were no differences at market. Reasons for the discrepancy in results still are not clear, Dr. Hanson said, although stress may have been involved in the Minnesota studies.

He went on to cite Ohio reports

C. Edwin Dayton

BABCOCK MANAGER — C. Edwin Dayton has been named general manager of Babcock Poultry Farm, Inc., Ithaca, N.Y., according to Monroe C. Babcock, president. Mr. Dayton was formerly an executive with Cooperative G.L.F. Exchange, Inc., Ithaca. He is a graduate of Pennsylvania State University, Harvard Advanced Business Management School and the management course of the American Management Assn. With G.L.F., Mr. Dayton has served as district manager in western New York and Pennsylvania, manager of the agent-buyer department, director of membership relations and director of the retail division, which included egg marketing, petroleum and all retail stores. Mr. Babcock also announced that Jack Mount will devote full time to breeding flock and production management. He has been with the firm since 1941, and is a member of the board of directors.

HERE'S WHERE ST. REGIS SPECIALIZATION CAN HELP YOU — Much of the overhead in a feed mill is caused in the packaging center—the areas of the plant dealing with bags and their handling, filling and shipping. Finding ways to reduce these costs calls for a specialist in multiwall packaging.

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on a three-generation study of all-plant rations for swine. There was no difference, he said, between results with all-plant and plant-animal rations.

Dr. Hanson said Iowa researchers reported that in recent studies of the effect of 3-nitro on carcass quality of swine, there was a slight difference in backfat probe but no difference in carcass quality when the animals were slaughtered. It had been reported earlier that 3-nitro appeared to improve carcass data. Dr. Hanson said improvement in swine carcasses in the U.S. will have to come through breeding. Better quality can be obtained by slowing gains and lengthening the feeding period, but what is desirable is fast-gaining good quality pigs. Dr. Hanson said he doesn't think that fat can be used in feeding the hogs that we now have on most farms; carcass fat content is usually increased.

Dr. Hanson also mentioned a Florida study in which there was no advantage from thyro-active substances in the treated sows or the baby pigs. He also cited other data along the same lines.

He noted a number of studies where injectable iron is used with baby pigs to prevent anemia. If pigs are not weaned until at least five or six weeks of age and the sows are good milkers, a second injection may be necessary.

Dairy Feeding and Management: Dr. Petersen's talk included a discussion of his work with antibodies and protective milk. He said the antibody field looks bigger all the time, including use with humans.

Discussing veal calf production, he first noted that if calves are collected from several sources, there may be a disease problem. And the more sanitary the herd from which the calves came, the greater the problem. This is because there are less antibodies in the colostrum which the calves get.

Dr. Petersen noted that antibodies can be produced by injecting killed bacteria into a cow's udder, and she then produces antibodies. He mentioned a study in which calves were deprived of colostrum and were on a farm with poor sanitation. Some calves were given protective milk (with antibodies); others were not. All those not given the protective milk died; the others were fine.

Dr. Petersen said he believes it will be possible to gather calves from many farms; put them on protective milk or inject antibody material, and they will be protected by the same method as in nature until they produce their own antibodies.

Dr. Petersen also called attention to rapid changes in dairying, with fewer, more specialized farms, and a rapid shift to better operations. Regarding pelleting or concentrating forage, he said work does not yet warrant conclusions. The main advantage today, he said, is in mechanizing handling of feed. He mentioned that he would like to see work on the pelleting of the grain ration for feeding in milking parlors, where the feeding period is short.

Dr. Petersen noted that there is more interest in cow pools. This, he said, may be a case of cows from ordinary herds doing better because of better management. Health problems are a possibility, he added.

Poultry Feeding: Dr. Johnson said that with turkeys, there will be increased use of synthetic amino acids, including methionine and lysine, for starter and pre-starter diets. Also, there may be greater use of fat; if protein is increased, more energy is needed.

With laying hens, there will be more complete feeds and increased specialization, with larger flocks. More pelleting is likely largely because of convenience in handling. Integration in layers will increase because it can free more of a farmer's dollars to increase size of operations.

In future research, more physiological information is needed and will get more emphasis.

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1. McGinnis, J. et al.: Use-history of Antibiotics as Related to Their Efficacy in Promoting Growth of Turkeys. Poultry Science, in press.
2. Slinger, S. J.: Poultry Nutrition in Focus in a Rapidly Advancing Industry. Feed Bag, July, 1958.
3. Whitehair, C. K.: Medicated Swine Feeds. North Am. Vet. (Am. J. of Vet. Sci.) 39 (No. 2) (Feb. 1958): 32.

**Made exclusively by CSC under Patent No. 2,809,892 issued October 15, 1957.*

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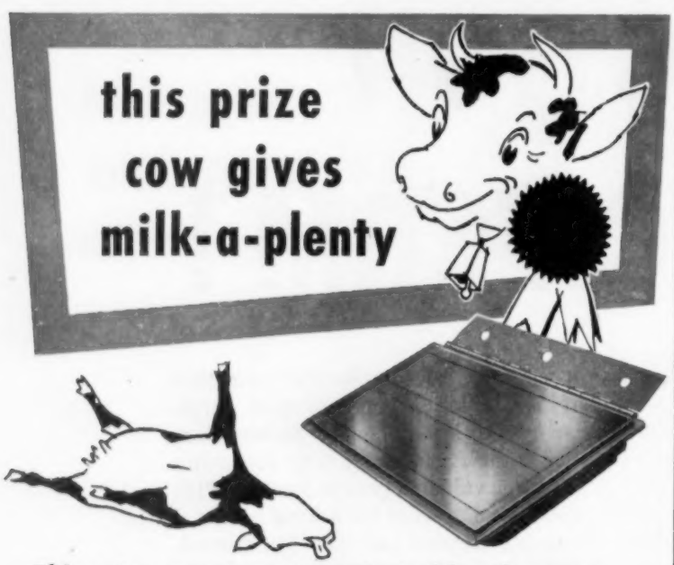

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TURKEY OFFICIALS—National Turkey Federation officials, shown at the recent federation convention in Des Moines, are (left to right): M. C. Small, Mt. Morris, Ill., executive secretary; Carl Stout, Richland, Mo., second vice president; Robert McPherrin, Riverside, Cal., fourth vice president; Walter Schwedler, Portland, Ore., president; C. N. Thurnbeck, Forest Lake, Minn., first vice president, and Morris Smith, Ellicott City, Md., third vice president.

Dollar Volume of Trade on Chicago Exchange Off 30%

CHICAGO—"In the past two years, depressed by the staggering build-up of government-owned surpluses, total dollar volume of business on the Chicago Board of Trade has declined 30%," Robert C. Liebenow, president of the board, stated recently.

"This is, I believe, unalterable proof that the free market for America's farm-grown commodities is being ruthlessly squeezed out of existence by government competition. This has occurred because the federal support program for agriculture has painfully failed to control and eliminate surpluses. Thus, the Commodity Credit Corp. is strangling the free grain trade and costing taxpayers millions of dollars while providing very doubtful benefits to the farmers."

Receipts Decline

Total dollar value of futures trading and cash grain receipts of the Chicago Board of Trade for 1958 declined to $21,409,115,000, a 15% drop from 1957 year-end volume of $25,140,317,000, and a 30% decline from the 1956 year-end volume of about $30.4 billion.

Dollar volume is computed by averaging high and low prices for the year, then multiplying by bushels traded. In major grains, 1958 high and low prices were: Wheat, 229⅝—179⅝; Corn, 135¾—108⅛; Soybeans, 240—206⅞.

Over-all volume of futures trading in grains, including soybeans, during 1958 decreased 11.8%, or 1,399,098,000 bu., from 1957 and 20% from 1956 year-end.

Actual futures trade, with percentage of increase or decrease from 1957, was:

GRAINS

Wheat	3,970,707,000 bu.	down	3.55%
Corn	2,108,465,000 bu.	up	5.29%
Oats	475,648,000 bu.	up	.2%
Rye	864,122,000 bu.	down	7.58%
Soybeans	3,041,194,000 bu.	down	29.8%

Total cash grain receipts in Chicago for 1958 were 237,307,000 bu., a 4.2% increase over 1957. "The cash receipts offer one bright spot in the total grain marketing picture. A larger percentage of grain arriving in Chicago was handled by the trade, at no cost to taxpayers, rather than by CCC. This is a result of government adoption of trade-advocated policies during this past year," Mr. Liebenow concluded.

Director Elected

ST. LOUIS—At a meeting of the board of directors of Hussmann Refrigerator Co., Raymond E. Rowland was elected a director to fill a vacancy resulting from the resignation of William P. Henphill. Mr. Rowland is president of Ralston Purina Co., St. Louis.

JOINS ROGERS STAFF

FOREST, MISS.—Wyatt Measells, who grows 30,000 broilers at Forkville, Miss., and has his Forest farm leased to Cudahy Packing Co., has joined the field staff of B. C. Rogers & Sons of Morton, Miss.

Production and Consumption of Feedstuffs, October-November, 1958

FEEDSTUFF—	Stocks Oct. 1 [1]	Production	Imports [2]	Exports [2]	Domestic disappearance	Stocks Nov. 30 [1]
			—1,000 short tons—			
Oilseed meals:						
Soybean	48.1	1,574.0	.0	50.0	1,490.8	81.3
Cottonseed	71.2	613.0	10.0	0.5	587.0	106.7
Linseed	26.3	87.5	.0	5.0	95.0	13.8
Copra	0.6	18.5	10.0	[3]	28.4	0.7
Peanut	1.5	12.0	.0	[3]	10.2	3.3
Total	147.7	2,305.0	20.0	55.5	2,211.4	205.8
Grain by-products:						
Wheat millfeeds	[3]	815.6	9.0	20.0	804.6	[3]
Rice millfeeds	[3]	42.4	[3]	[3]	42.4	[3]
Gluten feed, meal	[3]	181.1	[3]	[3]	181.1	[3]
Dist. dried grains	2.2	63.7	[3]	[3]	62.9	3.0
Brew. dried grains	4.9	33.0	[3]	[3]	33.5	4.4
Total	7.1	1,135.8	9.0	20.0	1,124.5	7.4
Other feeds:						
Fish meal	[3]	26.0	10.0	[3]	36.0	[3]
Alfalfa meal	439.7	138.7	[3]	[3]	217.3	361.1
Total feeds	594.5	3,605.5	39.0	75.5	3,589.2	574.3

[1] Stocks at processing plants only.
[2] Partly estimated.
[3] Not available.

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Mississippi Poultry Industry Growth Pointed Out

JACKSON, MISS.—New industry, increased employment, increased bank deposits and the introduction of allied business are involved in stepped-up egg and poultry production in Mississippi.

Several recent projects in these fields have been listed by the BAWI (balance agriculture with industry) Board, as follows:

Mississippi Federated Cooperatives of Jackson will establish an egg-processing plant at New Albany to serve 20 counties in northwestern Mississippi. The plant will process between 8,000 and 12,000 cases of eggs a week, and will employ about 80 people. The New Albany plant is being financed under the BAWI program with a $340,000 bond issue which was approved recently. The issue is being used to finance construction of a 16,000 sq. ft. building.

Another BAWI bond issue for $175,000 has been approved for construction of a plant at Taylorsville, Miss., for use as a poultry processing plant, feed mill and hatchery.

At Forest, Miss., a new industry—Bowman Industries, Inc.—will be in operation soon with 25 employees drawing annual wages of approximately $75,000. The plant will process poultry by-products into protein ingredients for feed. The operation will handle by-products of 400,000 broilers a week, or roughly 50 tons.

At Booneville, Miss., a new egg processing plant is underway which will employ about 50 people. The plant, a 14,000 sq. ft. building leased by Mid-South Packing Co., Memphis, will provide a $6 million-a-year egg market to producers of the Booneville area.

Book on Laboratory Animal Care Available

DECATUR, ILL.—A new book on the care and feeding of laboratory animals has been published by the A. E. Staley Manufacturing Co., Decatur, Ill., corn and soybean processor.

The new edition, "A Practical Guide on the Care of Laboratory Animals," is in keeping with current developments of laboratory research, the company announced.

Much of the experimental work discussed was carried out at Rockland Farms, New York, N.Y. Other experimental work and study was done at Staley's research farm, north of Decatur.

Material is confined to the laboratory mouse, rat, guinea pig, rabbit and primate. It is fully illustrated and documented. There are 56 references cited in its appendix.

The Staley company, publisher, is manufacturer of Rockland Diets, a line of laboratory animal feeds. Copies of the book may be secured by writing to the A. E. Staley Manufacturing Co., Decatur, Ill.

Fire Damages Texas Feed Milling Firm

WINTERS, TEXAS — Fire struck the C. L. Green Milling Co. here for the second time in eight months, but the flames were discovered in time to save most of the plant. Damage to feed and the building was estimated at several thousand dollars.

In June, 1958, a fire in other buildings did approximately $100,000 in damage.

Earl Heady to Head Iowa State 'Center'

AMES, IOWA—Dr. Floyd Andre, dean of the division of agriculture at Iowa State College, has announced that Dr. Earl O. Heady, department of agricultural economics and rural sociology, has been appointed executive director of the Agricultural Adjustment Center at Iowa State.

Iowa State College established the center in 1957 to study the problems of adjusting to economic growth which will be facing agriculture during the next 20 years. Nationwide interest has been expressed in the project, and other institutions and research organizations have been invited to participate with Iowa State in the work at the center.

Dr. Heady holds B.S. and M.S. degrees from the University of Nebraska, and a Ph.D. degree from Iowa State, where he has served on the staff since 1940.

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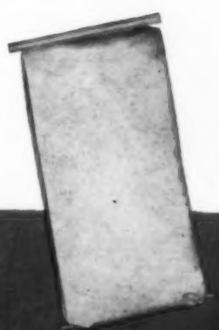

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Putting Research To Work

BY SPENCER H. MORRISON, PH.D., D. V. M.

Ammonia Formation in the Bovine Rumen with Various Diets

• O. T. Stallcup and C. G. Looper, Arkansas Agricultural Experiment Station; Journal of Agricultural and Food Chemistry, Vol. 6, No. 12, December, 1958, pp. 916-919.

ABSTRACT

A seven-year-old Holstein steer with a rumen fistula was utilized in this investigation to obtain data concerning the release of ammonia nitrogen from Morea, soybean oil meal and cottonseed meal. The roughage fed was cottonseed hulls fed ad lib twice daily at 6 a.m. and 6 p.m. The protein supplements tested were fed in the morning only, in the amounts necessary to meet the recommendations (NRC) for maintenance protein requirements (3.04 lb. cottonseed meal, 2.66 lb. soybean meal, and 3.33 lb. Morea fed daily). Each ration was repeated four times in a balanced single square design with one extra-period for carry-over effects. Each ration was fed for seven days, and rumen liquor collections were made on the eighth day. Grab samples of rumen contents were taken before feeding and at hourly intervals after feeding until 12 hours had elapsed. Care was taken to secure samples from all portions of the rumen at each interval.

The data indicated that there was a very rapid release of ammonia from Morea, which follows in the same manner as when urea is fed alone. A peak is reached at approximately two hours, and very high concentrations are maintained until approximately four hours after feeding, followed by a rapid decline. (Maximum average value 15 mg. NH_3 N/100 ml.) Soybean meal reached a maximum peak value of 2.3 mg. NH_3 N/100 ml. three hours after feeding. A rather uniform quantity was present four to 11 hours after feeding, indicating that deamination was uniform and occurred over a longer period of time as compared with the sudden accelerated rate of Morea. On the other hand, the release of ammonia from cottonseed meal reached a peak at two hours after feeding (2 mg. NH_3 N/100 ml.) which declined rapidly, until after 6 to 12 hours after feeding the amount released was only slightly greater than that from the basal ration of cottonseed hulls alone.

The concentration of total nitrogen present in the rumen liquor was highest when Morea was fed because of its great solubility. A relatively high level of total nitrogen was present when soybean meal was fed, indicating that relatively large particles of the meal are suspended in the liquor or else that large proportions of the nitrogen of the meal are soluble. Cottonseed meal showed a similar picture to soybean meal although at a somewhat lowered level.

The level of protein nitrogen was highest at all times when soybean meal was fed. The authors suggest that this may be due to a higher population of microorganisms in the rumen liquor, or to the fact that more protein is in solution and in suspension than for the other nitrogen sources studied—but further work is needed before valid conclusions can be made regarding this point. The protein values for cottonseed meal and Morea were variable, approximately equal, and in-between those of soybean meal and the control cottonseed hull ration.

The influence of the various rations on pH indicated that although the ammonia levels are high in rumen liquor when Morea is fed, the animal suffered no ill effects, probably due to the fact that the phosphoric acid contained in this product buffered the rumen well since the pH of the rumen was near 7.0 at all times. The pH for the other two protein supplements ranged between approximately

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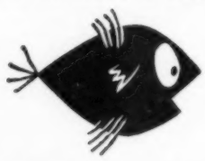

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S. Q.® —the most effective drug you can use to help prevent or control coccidiosis in turkeys. Also for the control of outbreaks in unprotected flocks—where feed intake has been lowered due to disease or stress conditions—or where break-throughs occur from uncommon species of coccidia.

NICARB® —for maximum protection... tried, tested and proved in over three billion birds. Now widely used with broilers and with replacement pullets, where there is no problem of accidental feeding to birds in production.

GLYCAMIDE® —best tolerated and highly efficient in permitting top weight gains and feed efficiency in broilers and replacements in the presence of coccidiosis.

Nature Keeps Equalizing the Odds

The prevention of coccidiosis outbreaks calls for more than the use of feeds containing antiprotozoan compounds. This year, for the first time since your widespread acceptance of sulfaquinoxaline, nicarbazin and glycarbylamide, coccidiosis has once again become an industry-wide problem.

The emergence of resistant and more virulent strains of coccidia... the buildup of unusually high levels of oocysts due, in part, to a particularly wet spring and summer... the general demands of large-volume poultry production... all have contributed to the complex and troublesome situation that faced the industry in 1958.

Because we at Merck felt that poultrymen would best be served by full and frank reporting of all new developments in this field—*"A Timely Report from Merck to the Growers of Broiler and Replacement Flocks"* appeared in December issues of the specialized agricultural publications.

Since we have always considered ourselves "partners in progress" of the feed industry, your response to this report and your praise for our "realistic approach" have been most reassuring.

NOW AVAILABLE, the new Merck booklet, *"Coccidiosis and Poultry Management"* to help you and your servicemen emphasize the need for improved management in preventing coccidiosis losses. Staff members of our Technical Service and Research Departments have prepared this comprehensive booklet on a most timely and important subject. Copies of the 8½" x 11" publication with room on the back cover for your mill or dealer imprint, will be mailed to you at request. Why not write and let us know how many copies you need for your sales and service organizations? Agricultural Products Dept., Merck & Co., Inc., Chemical Division, Rahway, N. J.

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Faster gains, better feed conversion and finish are the yardsticks your feeder-customers will use to measure the worth of the feeds you sell them. This suggestion is worth money: Put the "Sea Power" ingredients to work for you by supplementing your feeds with MANAMAR, rich in B_{12}, B-complex factors, trace minerals, the unidentified growth factors and fish proteins. Order your MANAMAR today!

Our laboratories are here to serve *you*. Call on us for help with your feeding and mixing problems.

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BROKERS IN FEED INGREDIENTS

6.5 and 6.9 for 12 hours after feeding period, with no appreciable difference between the two supplements. The cottonseed hull ration tended to become more alkaline with increased time after feeding.

COMMENT

This study is interesting in that it points out that the danger of alkalosis is probably less from the feeding of urea with phosphoric acid (as in Morea) than with the feeding of urea alone. The high protein levels present in the rumen liquor when soybean oil meal is fed may indicate some special advantage for this feed in the diet of ruminants when compared with either urea (or Morea) or cottonseed meal. This same effect has been noted previously in practical experiments by the Purdue, Iowa and other groups when comparing urea, linseed meal, soybean meal, and cottonseed meal as protein supplements for sheep and beef cattle. The Arkansas theory is interesting but certainly needs further proof—especially so, since only one animal was used in this trial, even though replicated several times!

●

High-Protein Peanut Oil Meal with Fish Meal-Fish Solubles Blend in Broiler Diets

• J. C. Driggers and F. R. Tarver, Jr., Florida Agricultural Experiment Station; Poultry Science, Vol. 37, No. 5, September, 1958, pp. 1107-1111.

ABSTRACT

Five battery trials and one floor trial were conducted to evaluate the use of 55% crude protein peanut oil meal when used as a replacement for one half and all of the soybean oil meal in a corn-soybean oil meal diet for broiler chicks.

The results indicated that peanut meal cannot replace soybean meal in a corn-soy type diet whether supplemented with adequate methionine or not. When 0.4% L-lysine was added to the all-peanut meal diet, and if the diet was adequate in such factors as vitamins, and especially methionine, the peanut meal could replace the soybean meal with fairly satisfactory results.

Better results are secured when fish meal with condensed fish solubles blend, 60-40, at the 3% level is added to a ration in which the peanut meal furnished one half of the protein furnished by soybean oil meal. Body weights were higher with the fish meal-fish solubles blend than with menhaden fish meal in comparison and suggests the possibility of a synergistic effect between condensed fish solubles and peanut meal, as well as the higher vitamin content and perhaps more uniform protein quality. This product appears to be a good practical supplementary source of lysine in peanut meal type rations. With methionine as economical as it is, the combined supplementation allows for the use of high protein peanut oil meal up to one half replacement for soybean oil meal in a corn-soy type diet for broiler chicks.

COMMENT

With increased production of commercial lysine becoming available, we can expect further interest in the use of peanut oil meal in both poultry and swine rations whenever the market conditions warrant its use. There is considerable difference in peanut meals, as evidenced by the great variation in chemical analysis. A careful quality control program is necessary if very extensive use is to be made of this product. Another fact of interest in the use of peanut meal in broiler rations is the fact that generally such meals are fairly high in fat content, and the fat contained is of very high quality for feeding purposes. The high protein peanut oil meals as used in this experiment are of the solvent type, and therefore are not high in fat when compared with expeller types, but are still higher than other common solvent meals.

APHF Sets Sale Date For Exhibit Space

KANSAS CITY — Space for the 1959 American Poultry Congress & Exposition, scheduled at St. Louis July 21-23, will go on sale March 16, according to E. G. Gray, exhibit manager. The event is sponsored by the American Poultry & Hatchery Federation.

"Because of the exhibitors' familiarity with the St. Louis Kiel Auditorium facilities, the space sale will be handled by telephone and correspondence from the APHF office in Kansas City," Mr. Gray said. "Exhibit firms will receive prior to March 16 a floor plan of the auditorium, and the order in which exhibitors will select space."

The system of space selection will be the same as previous years. The order of selection is based on the amount the exhibitor invested at the 10 preceding conventions. The largest exhibitor will have the privilege of selecting first. The second largest exhibitor will be next, and so on down the line until all prior exhibitors who have signified their intention of displaying products will have satisfied their needs.

Next in order will be new exhibitors, with their rank of selection determined by the order in which their exhibit needs have been made known to the federation.

Last year in Cleveland, 175 exhibiting companies reserved approximately 85,000 sq. ft. of floor space for the APHF meeting. A total of 4,233 persons attended the poultry industry's largest display of equipment.

One outstanding entertainment draw in St. Louis will be the St. Louis Cardinal baseball team. The Cardinals are scheduled for a night game July 21. They will also be in town the weekend preceding the opening of the APHF affair.

Feed Man Honored

EAST LANSING, MICH.—Andrew G. Lohman, secretary-manager of the Hamilton (Mich.) Farm Bureau Cooperative and a leader in the Michigan feed and poultry industry, is one of three Michigan agricultural leaders named to receive awards for distinguished service to agriculture. He will receive the award as part of Farmers' Week activities here Feb. 4. Included in his record of service are the offices of president of the Michigan Poultry Improvement Assn. and Michigan Feed Manufacturers Assn. and director of the Poultry & Egg National Board and the Institute of American Poultry Industries.

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LIVE YEAST CULTURES
For 28 Years a Proven and Dependable Source of
ENZYMES
FOR ACTION ON GRAINS
UNIDENTIFIED GROWTH FACTORS
NATURAL B COMPLEX VITAMINS
Better assimilation — Lower feed cost
VIABILITY GUARANTEED
These Active Factors Can Be Added to YOUR FEEDS
At Little or No Extra Cost
You will be hearing more and more about Enzymes in nutrition. Why not have them in your feeds now?
Write
WESTERN YEAST COMPANY
Chillicothe Illinois

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POLLYPHOS OFFERS YOU...

a minimum phosphorus content of 19%

Butler Chemical Company offers feed and mineral manufacturers a high quality defluorinated phosphate with a phosphorus content of 19% . . . a minimum 32% — maximum 36% calcium content and no more than .19% fluorine.

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Butler Chemical Company offers you . . . POLLYPHOS . . . at a low delivered cost per unit of phosphorus to feed and mineral manufacturers located in the western half of the United States.

proven high quality

POLLYPHOS has been tested for biological availability . . . proven to be a highly available source of phosphorus. The Textures . . . the blending characteristics . . . of POLLYPHOS . . . make this product a most desirable source of phosphorus supplement for . . . use in formulating all types of livestock and poultry feeds.

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Advertisement

Susan Treat, Miss EGGtober, and Kathryn Belle Niles, home nutritionist with the Poultry and Egg National Board, try one of the 26 EGGtober egg recipes distributed by the PENB to publications throughout the country. The PENB promoted EGGtober as the time to eat more eggs.

And Mr. and Mrs. Raymond Peters put cigar-smoking Bruce Davies to work pouring coffee at an EGGtober open house in Hooper, Nebraska. Davies, KFAB's radio farm director, was raffled off for a day in an EGGtober feed-dealer promotion . . . as were Rex Messersmith, Harry Campbell, Smitty Schmitz and Bill Allen, other leading Midwestern Radio Farm Directors.

Look what happened when the poultry

EGGtober '58... month of extra

EGGtober '58 very solidly proved that once an egg promotion gets rolling, there's no telling where it'll stop.

It started modestly, last spring, as a fall laying-feed sales event.

And within 5 weeks:

• feed manufacturers—240 of them—developed it as their *new way to get extra fall sales of laying feeds.*

• feed dealers—8500 of them—promoted it as a *new way for poultrymen to get extra-egg production.*

• and the poultry industry in general accepted EGGtober as a *new way to increase consumption of eggs.*

Advertisement

Over 8,500 dealers of 240 laying-feed brands promoted EGGtober feed sales with displays like this.

Miss Susan introduced "zip-top" eggs to conventioneers at such shows as the APHF convention, Farm Progress show and others.

and feed industries promoted

the bonus eggs

The pictures tell the highlights of the story—a report on the major activities peaked up during last fall's promotion.

Letters and comments tell the rest:

"EGGtober has been an outstanding public relations event for the feed industry" . . . "EGGtober helped increase feed sales" . . . "EGGtober can help us sell more eggs."

To the feed industry, this report serves another purpose. It's a hearty thanks from Pfizer for your generous acceptance of an idea through which we could help sell the need . . . while you sell the feed.

Allied industry manufacturers launched fall sales tie-ins.

Farm publications merchandised the program to farmers and dealers.

Network TV and radio programs helped publicize the event.

Home Demonstration Agents were provided with information items.

Local radio stations promoted EGGtober to farmers and consumers.

Feed dealers received special EGGtober promotion tips.

Feed trade, farm and poultry publications wrote about EGGtober.

EGGtober ads were run in leading farm and poultry publications.

EGGtober sparked poultry industry marketing and promotion efforts.

Over 470 billboards were run in the 100 leading poultry counties of the U.S.

The Poultry and Egg National Board tied in with the EGGtober event.

Radio announcements were carried every day throughout EGGtober.

Yes!

He's looking for some of your dog food made with our complete dog food cereals

★ TOASTED CORN FLAKES ★ KIBBLED CORN
★ TOASTED WHEAT FLAKES ★ KIBBLED WHEAT
★ CORN GRANULES ★ KIBBLED PREMIXES

(Straight or Mixed Shipments)

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LAUHOFF GRAIN COMPANY

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★ Buy and Sell Through WANT ADS ★

Egg Shell Quality begins with

EGGSHELL BRAND

OYSTER SHELL

You should know that these palatable, soft reef shells turn into quality egg shells in as little as 6 hours after consumption.

Pure, soft, clean and dust-free—they are tops in the field for digestibility.

Poultrymen are being told the EGGSHELL BRAND story in advertisements and point-of-purchase displays wherever EGGSHELL BRAND Oyster Shell is sold. Take advantage of this complete program—and sell the shells which prove that . . . "Egg Shell Quality begins with EGGSHELL BRAND."

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BALTIMORE, MARYLAND

SALES MEETING—Plans for the winter sales season were outlined recently when salesmen of Dannen Mills, Inc., St. Joseph, Mo., from the Great Plains states attended a two-day session at the Hotel Robidoux in St. Joseph. Those who attended the meeting were (top row, left to right): Bill Adams, Keith Sorum, Glen Hahn, Bryson MacDonald, Ray Gould (advertising manager), Paul Geiger, James Larson, Jim Rozell, Robert Waite (vice president for feeds), and Elton Rutledge. In the middle row are: Paul Hunter, Tom Little, Bill Foster, Max Peters, Jack O'Hara, Lucky McKean and Duane Clyne. In the bottom row are: Don Barnes, Marvin Hembree, Clyde Lott, Eugene Packwood, Dwight L. Dannen (president), Fred Summers (sales manager) and Dale Kyle.

Wisconsin Farmers' Reading, Radio, TV Habits Surveyed

MADISON, WIS.—A survey which should be of help to feed men and others who advertise to farmers has been conducted at the University of Wisconsin.

The survey of 500 farmers in six Wisconsin counties was conducted by L. R. Bostian and Dr. J. E. Ross, both of the university department of agricultural journalism, to find how reading, radio and television compete for farmers' time.

One conclusion drawn from the study was that the farmer who does a lot of reading is also likely to listen to the radio a great deal, but that if he does this he is not likely to have a high rate of television viewing.

Education and income did not seem to affect how much total time a farmer devoted to the mass media of communications, the researchers reported. Neither did his distance from an urban area, or the availability of the communications media in his locality.

Older farmers, those with smaller families, and those with the largest herds and most cropland used the media most heavily, the study showed.

Farmers spend a great deal of time with the communications media, according to the survey—an average of 3 to 3½ hours a day. This was divided up into an average of about 40 min. reading, an hour and 20 min. listening to the radio, and an hour and 40 min. watching television.

Since farmers who read a lot also tend to listen to the radio quite a bit, but spend less time in front of the television set, Mr. Bostian and Dr. Ross think farmers read and listen mostly for news and information, but look to television for relaxation and entertainment.

Low-income farmers were less likely than high-income farmers to take daily newspapers or as many farm magazines. Also, fewer low-income farmers had television sets, and they did not have as many radios. Still, the low-income farmers spent just about the same amount of time using the media—watching television, listening to the radio or reading printed material.

Other time-use figures show that the low-income farmer worked fewer hours than his prosperous neighbor. He made heavier use of the mass media to fill his time. He had a smaller family, went to fewer meetings, operated a smaller farm, and cared for a smaller herd—all factors which allowed more free time.

Part-time farmers took fewer magazines and newspapers, but were much more likely to own television sets than full-time farmers were. They spent less time reading and listening to radio, but more time watching television.

The researchers concluded that there is no doubt that mass media are available in farm homes and are extensively used. However, the reasons farmers select one medium over another are still not known sufficiently, the researchers said.

More Study Needed

They point out that further information is needed before farm information men, magazine and newspaper editors, or radio and television managers can be sure they are reaching the farm audience efficiently with the material of most interest and most potential usefulness.

There are all kinds of CORN CRUSHERS

. . . but take it from us . . . no matter what grinding mill you are using, it will pay you to investigate the

KELLY DUPLEX

two roll Corn Crusher-Feeder. It assures you steady, even feeding—uniform reduction of corn, cobs and husks—greater protection for your equipment—longer life—and lower operating costs.

Mail the Coupon Today

The Duplex Mill & Mfg. Co., Springfield, Ohio
Without obligation, send me complete information on the Kelly Duplex Corn Crusher-Feeder.

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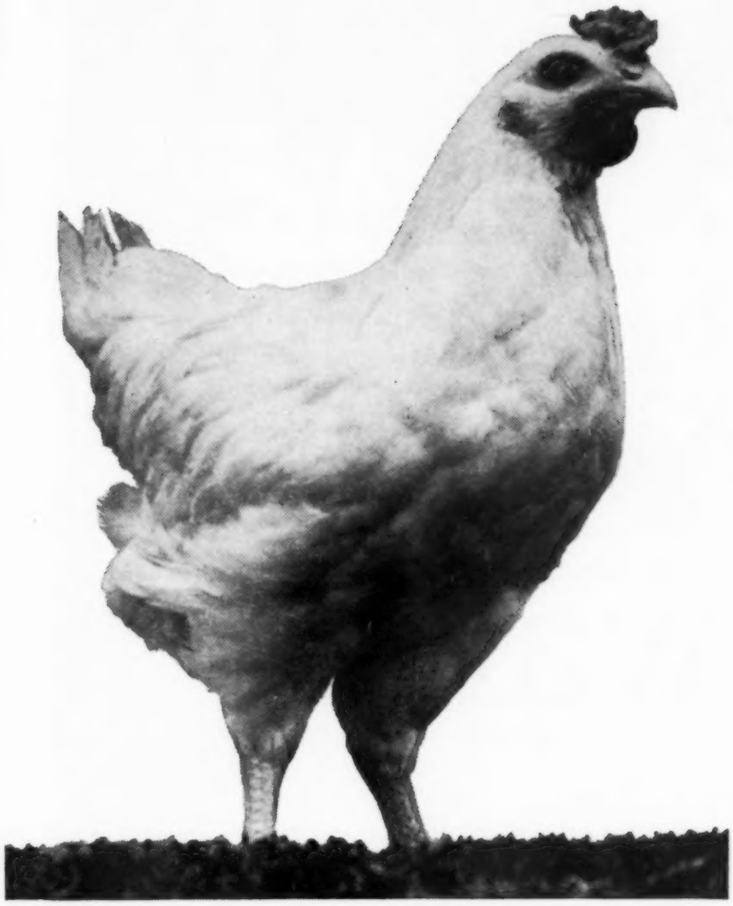
NO OTHER BIRDS ...ANYWHERE...



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Georgia:		
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9 wks., 5 days	3.90	2.38

These recent figures of typical performance in large commercial lots of broilers based on Nichols 108 females show what *you* can expect.

Want more proof? A split-house test will convince you. Call or write, and we'll help you set it up.

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There is no multiwall like

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WONDERWALL is the great new development in multiwall bags that makes all ordinary bags old-fashioned. Proof? Here it is! And it's from the field itself—from the roughest, toughest "testing ground" of all! Read what producers of feed and feed manufacturers are saying about WONDERWALLS.

"In packaging mash, we used the new* WONDERWALL *bags—and there was* no *breakage in the first 800 shipped."

"We decided to switch to WONDERWALLS *for packaging dehydrated alfalfa. We're certainly glad we did. We got significantly better and quicker handling. And breakage in shipment was negligible."*

"We put the new* WONDERWALL *bag (120# basis) to our own drop test against ordinary kraft (130# basis). We found that* WONDERWALLS *survived* three times *as many drops before breakage as the ordinary kraft bags."

"Switched from bags made of three-ply 50-pound regular kraft to WONDERWALLS *made of two-ply 50-pound Clupak paper. We report complete satisfaction with the change."*

The proof keeps piling up—WONDERWALLS outperform ordinary multiwall bags. Reason: they're made of remarkably tougher Clupak paper—the paper that stretches . . . the paper that "soaks up" the wallops without failing where ordinary kraft breaks.

WONDERWALLS pack faster, handle easier and stack firmly, too. They add up to greater efficiency and lower costs. And—best of all—they don't cost any more than old-fashioned bags. Let us include a trial shipment of 5,000 WONDERWALLS in your next order.

**Clupak, Inc.'s trademark for extensible paper manufactured under its authority.*

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Getting the Most Effective Use From Competitive Feeding Tests

EDITOR'S NOTE: This article, which presents advice on how to conduct feeding tests, was presented recently by Dawe's Laboratories, Inc., Chicago, in "Frontiers in Nutrition Supplement," for customers of that company. In a preface to the article, it was noted that the article was written "to help the feed man get the most effective use from such feeding tests," and it was pointed out further that "while this outline refers to tests with poultry, the principles will hold for tests with other classes of stock."

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The promotional advertising and selling values of competitive tests are well known. However, these benefits are derived only when the test is a successful one. The results of an unsuccessful test can be as disastrous as a successful one is beneficial. Nevertheless, a properly set up, conducted and evaluated feeding test is one of the most potent selling devices available to a feed manufacturer.

In view of the known value of competitive tests, and the recognized dangers involved, some precaution should be observed in instituting and conducting such a test.

When to Run Tests

When should competitive tests be conducted?

- A competitive test should be run only when the account is large enough to justify the risk involved. A competitive test conducted in an attempt to secure a small account, if the results are unfavorable, may have an adverse effect on a sizable account if the prospective customer is aware of these results. Furthermore the results of an unfavorable test can be used most effectively by local competitors to enhance their position and injure yours.
- A competitive test should not be conducted unless the **feeder is open minded** about the merits of your product. A feeder who grudgingly, or with ill will, agrees to conduct a competitive test is unlikely to be convinced even if the results are extremely favorable. Furthermore, any test, to be effective, should be conducted with an open mind. A biased feeder may, without realizing it, favor in some way during a feeding test the feed he is particularly sold on. A test conducted under such circumstances is unlikely to do a selling job even if the results are favorable.
- A competitive test should be run only when **stock capable of responding** to a superior ration is available. If a chick is genetically unable to respond to a superior ration, the results obtained by the use of such birds in feeding tests are more a reflection of the genetic limitation of the bird than a test of the value of the feeds involved.
- A competitive test should not be conducted unless **good housing and management** are assured. The growth a bird makes at any particular time is influenced by feed, genetics, housing, management and disease. Any one of these can completely offset a favorable combination of the others. It is imperative that environment and management conditions are such as to allow the feed to be the only limiting factor in influencing the growth of the test birds.

Test Conditions

To satisfy a basic principle of competitive tests, conditions must be such that growth is limited only by the adequateness of the rations. Furthermore, the conditions of housing, management, sex and genetics should be as nearly identical as possible for all pens of birds in the test. Thus, the second point of consideration involves "setting up a competitive test."

a. Housing conditions for all birds should be as nearly identical as possible. This means that birds on test should be in adjacent pens under the same roof. The pens should be in the center of the house, if possible. The same type of brooding, feeding and watering equipment should be used in all pens in the test. If these requirements cannot be met, evaluation of the results must take into consideration differences in environmental conditions.

b. Birds in all test pens should be from the same source. This is important. Not only should the birds be from the same source, but they should be of the same sex. If all males are not available, every effort should be made to have equal numbers of both sex in each test pen.

An equal number of chicks from each box should be assigned each test pen. All test birds should be started the same day. Avoid starting one group on test a week or even a day after another has been started.

c. Use large enough numbers of birds for results to be significant. Try to have at least 100 birds on each feed on test. A difference of 2-3 oz. in weight may be highly significant in a test with 20-50 birds. However, a complicated mathematical analysis is required to establish this fact, and the grower may not be impressed by what appears to be minor differences. In a larger number of birds, even minor differences are likely to be more impressive.

d. Avoid tests in hot weather. Extremely hot weather will limit feed consumption, and thereby, growth. Since the feed must be consumed before growth can be obtained, avoid hot weather growth tests.

e. Know the person who will do the actual feeding and caring for the birds on test. Minor differences in management, etc., may have major influence on the results. The person doing the work of feeding, etc., may look upon the test as so much extra work for him, and unintentionally, perhaps, "stack the cards" against your pen.

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why the test is run, the advantages your feed will mean to his employer and indirectly to him.

Secure his good will and confidence before the test is begun.

f. Be sure that the ingredients used in the ration are of the highest quality. A feed made from an exceptionally good formula, but composed of low quality ingredients will perform in a mediocre manner. Do not allow the ingredients in the ration to defeat the purpose of a feeding test.

Supervision

Once the test is properly set up, some supervision is required. At irregular intervals visit the test pens and observe:

1. Growth. In obtaining birds for sample weighing, do not select the ones easiest to catch. Frequently these birds are ill or cowered and apt to be below average in weight. Select equal numbers of males and females from each pen.

2. Feathering. If final growth results in minor differences between competitive lots, feathering and other observations taken during the growing period may be determining factors in selling a feed.

3. Color. The degree of the color or pigmentation during the early growth period, while of no practical value, has considerable selling merit. Observations on degree of pigmentation should be made during the growth test.

4. Disease. The presence of disease may throw off the entire test. On the other hand, a strong selling point is attained if the birds on your feed are less severely infected and make rapid recovery.

5. Condition of droppings and litter. Observe particularly if the litter is wet. Dry litter and firm droppings are a definite asset to a feed. Moreover, if wet litter is observed around the water fountain, suggestions for the improvement of management may prevent the occurrence of disease and its subsequent harmful effect on feeding results.

6. Attitude of birds. Observe if birds are active, eating and free from vices such as cannibalism, toe and feather picking. Some of these, while inherited characteristics, may be indicative of deficiencies in the ration.

7. Management. Look for wasted feed due to over-filling of feed hoppers. Make sure records of feed consumption, mortality, etc., are kept up to date. Remember, poor management can ruin a feeding test.

Discuss the test with the handler. Not only does this make him feel important and appeal to his ego, but he may make remarks that have an important bearing on the test.

After these observations and making notes on them, have the owner visit the test pens with you and point out examples that indicate the superiority of your product. Make complete notes of your observations on each visit; date and keep these for your records.

Keeping Records

Do not attempt an "on the spot" evaluation of the results as soon as they are ascertained. Not only is it more impressive, but a better analysis can be made if the results are studied and an evaluation presented to the feeder at a later date. The following records are necessary if the results are to be evaluated properly:

1. Number of birds started, according to sex, for each pen.

2. Number of birds finishing test, according to sex, for each pen.

3. Average weight of males and females in each pen.

4. Total feed consumed.

5. Condition of birds that ended test.

If birds are sold, get record of number of runts, poorly feathered birds, coloring, price received, etc., for each pen.

If birds are not sold, note if birds on your feed appear more uniform, better feathered and better colored than birds on competitive feed—call owner's attention to this.

6. Cost of each feed in test.

7. Mortality record. If possible, this record should indicate when birds died, and why. The records should also show when and why birds were removed from the pen if for reasons other than death.

Evaluating Records

The records should be evaluated as follows:

1. Compare mortality (including culls) for each pen.

2. Compare weight by sex for each pen.

3. Calculate feed utilization or efficiency for each pen.

4. Determine cost of producing pound of meat. This is very important if your feed is higher priced than a competitor's. However, if feed efficiency is better, it may be the most economical to use.

5. Based on this calculated cost of producing a pound of meat and the average weight of the males and females in each pen, determine the cost of producing a quantity of birds in keeping with the number ordinarily raised by the grower.

6. Use this cost figure and the prevailing market price of broilers (or if birds were sold, the price received for each pen) to calculate the profit above feed cost for each pen.

This is a better procedure to use than the actual profit per pen the producer may have realized. Almost invariably the pen with the largest number of males will produce the greatest poundage of meat and the largest profit regardless of cost of production and efficiency of feed utilization. Although the cost per pound of meat may have been lower in the pens fed your feed, if this pen contains a larger number of females than a less efficient competitive pen, the actual profit from the pen may be lower than the competitive pen.

7. Assemble these figures in a table.

a. Observe points wherein your product is superior.

b. List observations made during course of the test which point out the superiority of your feed.

c. Arrange a conference with grower, present the facts and take the order.

Overcoming Competition

In event some competitive feed is slightly superior to yours in promoting growth and/or profit, this may be overcome if observations made during the experiment show that this pen commanded advantage in location, management, etc. Furthermore, feathering, color, litter condition and other observations made during the course of the experiment may indicate an advantage for your feed that will offset the adverse results obtained.

If the test was conducted without bias for any pen, it is extremely unlikely that any competitive feed will show an outstanding superiority over yours. However, if this does occur, a review of observations made during the test may reveal management or disease influence responsible for the results obtained.

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- Protective chemicals are sealed in
- Cartons stay bright, attractive
- Twine stays strong and pliable
- Cartons stack easily for displays

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Cyanamid helps boost swine feed sales by telling your customers:

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AUREOMYCIN®, incorporated in your good farrowing feeds for sows, can mean extra yearly returns for your hog producers!

This is a fact conclusively shown in 7 experimental trials held on 7 different farms in Iowa. 88 sows and their litters were involved in the experiments.

One half of these sows received no AUREOMYCIN at any time. The other half received farrowing feeds containing 200 grams of AUREOMYCIN per ton for

pigs per sow

7 to 14 days before and 7 days after farrowing. Then, these sows were placed on feeds containing 50 grams of AUREOMYCIN per ton until the pigs were weaned at 8 weeks.

Results showed 7% more pigs weaned from the sows fed AUREOMYCIN! This averages out to 7 more pigs per 12 sows. That's an *extra litter* and a significant profit picture for any hog raiser!

Cost of feeding AUREOMYCIN to 12 sows was approximately $26 for the entire feeding period. Sales value of the 7 extra pigs sold as feeders was $105. This resulted in a net extra return of $79. On the basis of two farrowings per year, this means an extra yearly return of $158.

Let *your* customers for swine feeds benefit by furnishing farrowing feeds containing AUREOMYCIN. Write for special bulletin giving more detailed results of these trials. American Cyanamid Company, Agricultural Division, New York 20, New York.

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*AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.

USDA Cites Research On Better Management Of Forage for Cattle

WASHINGTON—Several years of mountain meadow research in Colorado has demonstrated that improved management can mean big gains in beef cattle production efficiency, U.S. Department of Agriculture and state researchers reported.

The research, which has been concerned mainly with the time of harvesting forage crops, use of irrigation water and fertilization, compares the advantages to be gained from skillful use of these combined practices with their ordinary use. Certain phases of this research have been reported previously by USDA.

The total of these practices: (1) produced market-weight beef animals faster; (2) cut forage intake per pound of beef produced; (3) took less water to produce a pound of forage; (4) increased the yield of harvested forage per acre, and (5) increased the crude protein content of the forage.

The studies were conducted on two ranches by Forrest M. Willhite, soil scientist of USDA's Agricultural Research Service, in cooperation with the Colorado Agricultural Experiment Station scientists at Grand Junction. Rancher research corporations and individual ranchers aided.

Only 520 days were required to produce 1,000-lb. beef animals with the experimental practices, compared with 1,260 days under ordinary ranching conditions. Total forage intake per beef animal in test practices was only 13,300 lb. against a total forage intake of 20,300 lb. for usual practices.

Thus, cattle under test practices produced a pound of beef on about 13 lb. of forage, compared with some 30 lb. needed for a one-pound gain under usual conditions.

Striking differences were found in a comparison of adequate and inadequate fertilization, irrigation, and crop management. The combination of an early harvest, applied nitrogen and good irrigation practices increased the hay yield to 4.82 tons per acre, crude protein to 19.1%, and crude protein per acre to 1,844 lb.

A late harvest produced only 2.16 tons of forage per acre without the application of nitrogen and with poor management of water. Crude protein in the forage amounted to only 10.7%, and crude protein produced per acre totaled 464 lb. under these conditions.

During a 90-day growing season, yields of grass produced by adding nitrogen were approximately 12,000 lb. per acre, and yields for a grass-legume mixture were about 7,500 lb. per acre.

Good versus poor harvest-management differences are reflected in the quality of the forage crop, Mr. Willhite said. Yield from an early cutting plus a second cutting was generally equal in tonnage to the entire yield of a late cutting. But early-cut forage plus second-cut averaged more than 12% crude protein—50% more than the late cut. In both cases, about 60% of the forage was grazed and 40% was harvested and fed as hay.

A combination of good water management and early harvest produced a ton of forage with as little as 9.5 in. of applied water an acre. Under conditions of usual water management and late harvest, up to 136 acre-inches of applied water were required to produce one ton of forage.

Good management needed only 135 gal. of water to produce one pound of hay, and 1,625 gal. to produce a pound of beef. Ordinary management practices required 2,000 gal. of water for a pound of hay, and 26,000 gal. for a pound of beef.

William C. Miller

MILL SUPERINTENDENT—The appointment of William C. Miller as superintendent of the new feed mill at Jasper, Ala., has been announced by The Quaker Oats Co., Chicago, effective Jan. 1. Mr. Miller will be responsible for all plant production and distribution, and for grain and ingredient purchasing. He said he expected the mill to begin operations this spring. Mr. Miller joined the firm as an order and billing clerk at St. Joseph, Mo., in 1929. In 1951 he was transferred to the company's Cedar Rapids, Iowa, plant as manager of the feed mill. In 1954 he was named feed mill coordinator of the company's feed mills, and in 1956 he was appointed manager of the shipping department.

Grant Renewed to Test Urea in Dairy Feed

DURHAM, N.H. — The research project at the University of New Hampshire on the use of urea in feeding dairy cows has received a renewal of its $5,000 grant awarded by E. I. du Pont de Nemours & Co., Wilmington, Del.

The grant, which was received last year for the first time, will continue for a three-year period. The project is headed by Prof. Nicholas F. Colovos, animal nutritionist, assisted by Harry Keener, dairy nutritionist.

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YEAR	COWS	MILK	FAT
1953	53	9135	348.7
1954	107	9265	378.7
1955	106	10082	403.2
1956	113	10242	412.2
1957	120	10850	433.8

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- Concord, N. H.
- Bridgewater, Mass.
- Preston, Md.
- Hickory, N. C.

Convention Calendar

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

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March 5 — Illinois Swine Growers Day; University of Illinois, Urbana; chm., Dr. S. W. Terrill, Department of Animal Science.

March 15-16—Quad States Grain, Feed & Seed Convention; Sheraton Martin Hotel, Sioux City, Iowa; pres., Don Suttie, Corn Belt Supply Co., Inc., 220 S. Chambers St., Sioux City, Iowa.

April 14-15—Poultry and Egg National Board meeting; Edgewater Beach Hotel, Chicago; gen. mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3, Ill.

June 9—Northeastern Poultry Producers Council Egg Quality and Grading School; University of Massachusetts, Amherst; mgr., Dr. Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

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Jan. 26-28—Southeastern Poultry & Egg Assn., Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Jan. 27-28—Agricultural Industries Forum; University of Illinois, Urbana; Harold G. Halcrow, Agricultural Economics Department.

Jan. 28-30—American Dehydrators Assn., Shamrock-Hilton Hotel, Houston; exec. vice pres., Joseph Chrisman, Board of Trade Bldg., Kansas City 5, Mo.

Jan. 29—New Jersey Feed Industry Assn.; Hotel Stacy Trent, Trenton; pres., I. Lintner, P.O. Box 88, Somerville, N.J.

Jan. 29-30—Oregon Animal Industry Conference; Oregon State College, Corvallis; sponsored by Oregon State College and Oregon Feed & Seed Dealers Assn.; sec., Russ Hays, 702 Lewis Bldg., Portland, Ore.

Jan. 31 — Connecticut Regional Swine Producers Day; University of Connecticut, Storrs; Donald M. Kinsman, Animal Husbandry Dept.

Feb. 4 — Illinois Feed Nutrition Conference; Illini Union Ballroom, University of Illinois, Urbana; chm., Dr. Harold H. Draper, Animal Science Dept.

Feb. 5—Boston Grain and Flour Exchange Banquet; Sheraton-Plaza Hotel, Boston; chm., P. R. Sutliff, 177 Milk St., Boston, Mass.

Feb. 6-7—Minnesota Turkey Growers Assn.; Leamington Hotel, Minneapolis; sec., A. E. Eisenmenger, 2200 University Ave., St. Paul, Minn.

Feb. 9-10—Montana Nutrition Conference; Montana State College, Bozeman, Mont.; chm., Dr. O. O. Thomas, Animal Industry Dept.

Feb. 11-12—Feed Mill Production School; Leopold Hotel, Bellingham, Wash.; sponsored by Washington State Feed Assn.; mgr., J. G. Wilson, 814 Second Avenue Bldg., Seattle, Wash.

Feb. 12-13 — Washington State Feed Assn.; Leopold Hotel, Bellingham; mgr., J. G. Wilson, 814 Second Avenue Bldg., Seattle, Wash.

Feb. 12-13—Utah Feed Manufacturers & Dealers Assn. Nutrition Conference; Brigham Young University, Provo; sec., Dr. Lawrence Morris, Brigham Young University, Provo, Utah.

Feb. 13-15—Institute of American Poultry Industries' Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; Institute of American Poultry Industries, 59 E. Madison, Chicago 2, Ill.

Feb. 16-18—Farmers Elevator Association of Minnesota; Hotel Pick-Nicollet, Minneapolis, Minn.; sec., Lloyd A. Nelson, Lumber Exchange Bldg., Minneapolis.

Feb. 16-18—Midwest Feed Manufacturers Assn., annual convention,

CALENDAR FOR 1959

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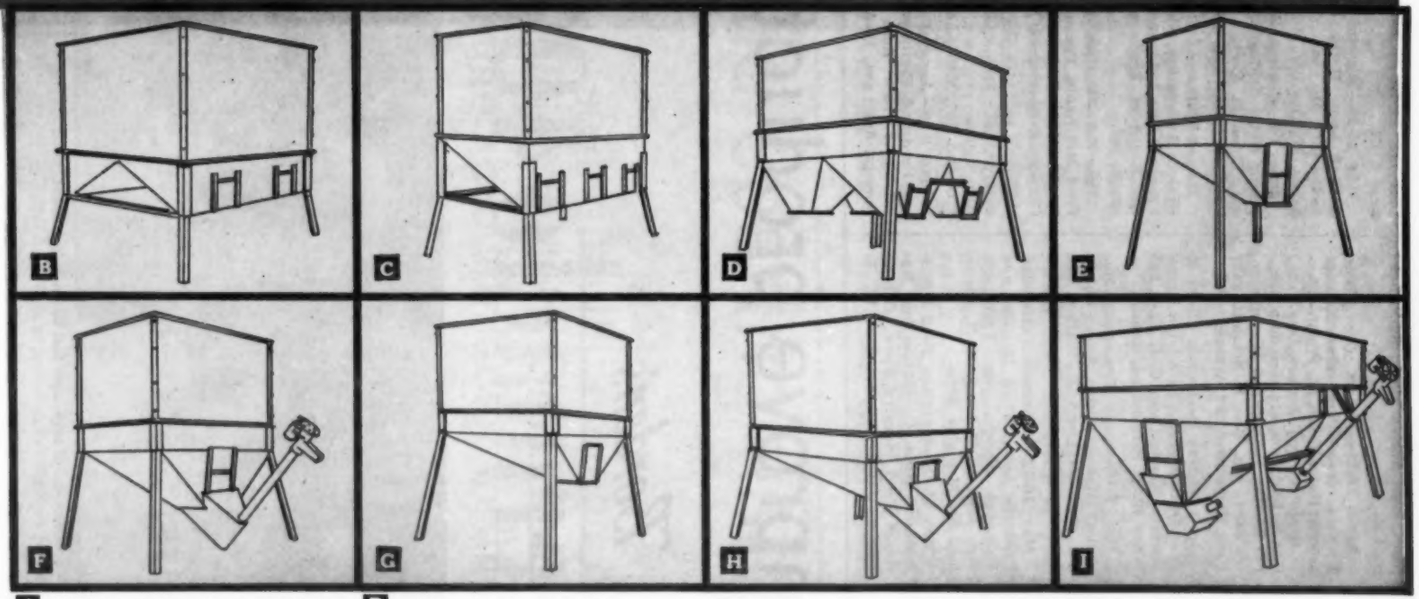

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Lemanco bins are rigidly constructed and built to last. Bases — all welded 14 gauge steel (16 gauge for 6618-42 and 5424-24); sides — 16 gauge galvanized steel; legs — 3" x 3" x ¼" angles on all hopper type bins (2½" x 2½" x ¼" angles on side draw bins). Specially formed corners give extra reinforcement.

A 7618-48-6D 6 door (4 ton) height 7'0"
Three doors on side make for easy cleanout. Especially desirable for pullet and hen feeding.

B 7618-48-4D 4 door (4 ton) height 7'0"
6618-42 4 door (3 ton) height 6'6"
Regular all-purpose 4-door bulk feed bin.

C 7424-42 (2½ ton) height 7'2"
5424-24 (1¼ ton) height 5'6"
Designed for placing against wall or in corners where large capacity not required.

D 7736-36 (4 ton) height 7'6"
Side doors and bottom draw gates permit complete emptying of any type feed including mash of high fat or high fiber content.

E 7540-36G (3¼ ton) height 9'2"
7540-48G (4 ton) height 10'2"
Designed for over automatic feeder where head room is not a problem. If necessary to extend through roof, cover is available or plans furnished to build your own. These bins easily adapted for air delivery.

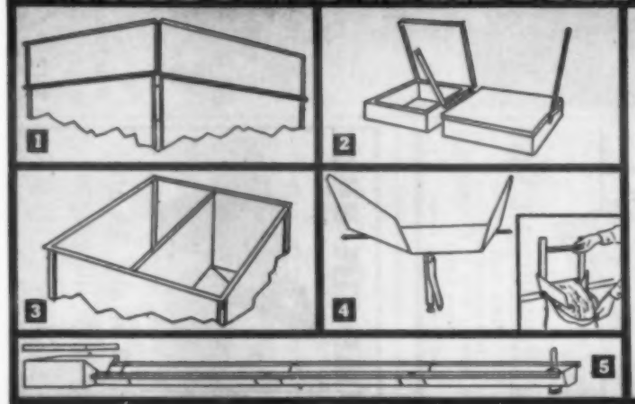
F 7540-36A (3¼ ton) height 8'0"
7540-48A (4 ton) height 9'0"
The large access doors and the pitch of the base make these excellent bins for all feeds.

G 7636-36G (4 ton) height 8'6"
7636-48G (5 ton) height 9'6"

H 7636-36A (4 ton) height 7'0"
7636-48A (5 ton) height 8'0"
These models, (illustrated G and H), are designed for locations where head room is limited but large capacity required. Bins are recommended for pellets and crumbles. Due to shallower pitch they are not recommended for mash.

I 10740-24 (5¼ ton) height 6'3"
10740-36 (6½ ton) height 7'3"
10740-48 (8 ton) height 8'3"
Recognizing the trend toward larger capacity houses and mechanical feeding, these bins give inside storage up to 8 tons of feed. When one compartment is emptied auger is easily switched to the other. Two augers available if required.

ACCESSORIES MAKE BULK FEEDING EASIER



1. Bin extension for a Lemanco 4-ton 7618-48 and 7540-48 bins which give an extra ton of capacity when, or if, needed.
2. The Lemanco Roof Door has a heavy wood base making mounting to any type roof extremely simple. Wire fastened to upright lever permits opening and closing from the truck or ground.
3. Factory built partition to fit a Lemanco standard 4-ton 7618-48 bin designed for those who need a partitioned bin in their feeding program. Pre-punched holes facilitate installation.
4. Picking up feed is a simple chore for one man with the Lemanco Bag-Out, designed for Lemanco bins—a device designed to fit a particular need of the broiler industry.
5. Continuous Easy-to-Clean watering trough fabricated in 10 foot lengths so trough can be sectioned in multiples of 10 foot with smaller joints of 4 foot and 2 foot. Special leak-proof bolted joints, neoprene sealed, no welding necessary. Trouble-free valve and large drainage pipe prevent overflow into house.
6. The Lemanco Feed Barrow, especially designed for the poultry industry, makes the feeding operation easier for any member of the family, young or old. Built of heavy gauge steel and chrome plated handles, it is so balanced that it cannot tip over and spill feed. Carrying capacity 165 pounds. Oilite bearings and dual or single semi-pneumatic wheels. Dual wheels recommended for areas where soft litter used.
7. Companion piece to the Lemanco Feed Barrow, the Feed Tube Scoop, 9" x 6", weight one pound, designed primarily for filling tube feeders without spillage. Vent holes in bottom permit filling and emptying of scoop without sloughing of feed.

PIG FEEDER BINS

For Inside or Outside Use

- Encourage expanded production without increasing labor.
- Permit quantity buying and bulk storage over feeders where needed.
- Protect feed from flies, moisture, rodents and waste.
- Control supply of fresh feed to feeders.

Outside 7524-48 (3¼ ton) with Lemanco Roof Door

Inside 7524-48 (3¼ ton) Height Over 36" Feeder 9'

These bins are of the same quality construction as those designed for the poultry industry.

When ordering state height of feeder to be used — this determines length of legs.

Telephone or write today for prices and further information.

LEACH MANUFACTURING COMPANY GADSDEN, ALABAMA — P. O. Box 1010 — Tel. Liberty 7-5472

Muehlebach Hotel, Kansas City; executive vice president, Lloyd Larson, 20 West Ninth St., Kansas City, Mo.

Feb. 22-24—Colorado Grain, Mill & Feed Dealers Assn.; Shirley Savoy Hotel, Denver, Colo.; sec., Olaf Erickson, 714 Cooper Bldg., Denver 2, Colo.

Feb. 23-26—Colorado Livestock Days; Colorado State University, Ft. Collins, Colo.; chm., Dr. Lamar Esplin.

Feb. 24—Ohio Broiler and Market Egg School; Agricultural Administration Building, Ohio State University, Columbus, Ohio; chm., P. C. Clayton, extension poultryman.

Feb. 24-25—Virginia Feed and Nutrition Conference; Hotel Roanoke, Roanoke, Va.; co-chm., Wm. G. Ritchie, J. S. Ritchie & Sons, Petersburg, Va., and Paul M. Reaves, professor, Dairy Science, Virginia Polytechnic Institute, Blacksburg, Va.

Feb. 26—Illinois State Turkey Growers Assn.; Animal Sciences Laboratory, University of Illinois, Urbana, Ill.; sec., S. F. Ridlen, Poultry Extension Specialist.

Feb. 27-28—New Mexico Grain & Feed Dealers Assn.; Hilton Hotel, Albuquerque; sec., Parley Jensen, Box 616, Albuquerque, N.M.

March 1-3—Ohio Grain & Feed Dealers Assn., Inc.; Neil House, Columbus, Ohio; sec., G. E. O'Brien, 710 N. Ohio Street, Greenville, Ohio.

March 4—Mutual Millers & Feed Dealers Assn.; Statler-Hilton Hotel, Buffalo; sec., Mrs. G. A. Bentley, 41 Chautauqua Ave., Jamestown, N.Y.

March 19-20—Oregon Feed & Seed Dealers Association; Multnomah Hotel, Portland; sec., Russ Hays, 702 Lewis Bldg., Portland 4, Ore.

March 19-20—Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. Richard D. Creek, Poultry Husbandry Department, University of Maryland, College Park, Md.

March 20-21—Broiler Industry Conference; Statler Hotel, Dallas, Texas; sponsored by National Broiler Council; vice pres., Frank Frazier, P.O. Box 368, Richmond, Va.

March 25—Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati; sponsored by Distillers Feed Research Council; exec. director, Dr. Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati 2, Ohio.

April 2-4—Pacific Dairy & Poultry Assn.; Coronado, Cal.; sec., Carl E. Nail, 1304 E. 7th St., Los Angeles.

April 8—Purdue Egg Day; Purdue University, Lafayette, Ind.; sec., David D. Jackson, extension poultryman, Purdue University.

April 12-15—National Fisheries Institute; Hotel Commodore, New York City; asst. gen. mgr., Mal Xavier, 1614 20th St. N.W., Washington 9, D.C.

April 12-17—Grain Elevator & Processing Superintendents; Multnomah Hotel, Portland, Ore.; sec., Dean M. Clark, 1120 Board of Trade Bldg., Chicago 4, Ill.

April 23-25—California Hay, Grain & Feed Dealers Assn.; Fairmont Hotel, San Francisco; sec., John F. Gilmore, Blue Anchor Bldg., Sacramento, Cal.

April 23-25—Joint Convention, Texas dealer and manufacturer groups; Hotel Texas, Ft. Worth—Texas Grain & Feed Dealers Assn.; sec., Ben M. Ferguson, 614 Meacham Bldg., Ft. Worth; Texas Feed Manufacturers Assn., sec., Ben. E. Schmitt, 3421 Park Ridge Blvd., Ft. Worth.

April 30-May 2—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

May 8-10—Grain Processing Machinery Manufacturers Assn.; Chicago; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

May 10-12—National Cottonseed Products Assn.; Mark Hopkins and Fairmont Hotels, San Francisco; sec., John F. Moloney, 43 N. Cleveland St., Memphis, Tenn.

May 11-13—American Feed Manufacturers Assn. Convention and National Feed Industry Show; Conrad Hilton Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 15-16—Missouri Grain, Feed & Seed Assn.; Hotel Governor, Jefferson City, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

June 1-2—Central Retail Feed Assn.; Hotel Schroeder, Milwaukee; sec., Eldon H. Roesler, 1712 W. St. Paul Ave., Milwaukee, Wis.

June 7-9—Indiana Grain & Feed Dealers Association; Sheraton Hotel, French Lick, Ind.; sec., Fred Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 7-9—Eastern Federation of Feed Merchants, Pocano Manor Inn, Pocano Manor, Pa.; sec., Austin W. Carpenter, Sherburne, N.Y.

June 8-10—Alabama Poultry Industry Assn.; Municipal Auditorium, Birmingham; exec. sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 9-10—Association of Southern Feed and Fertilizer Control Officials; Velda Rose Motel, Hot Springs, Ark.; sec., Maurice B. Rowe,

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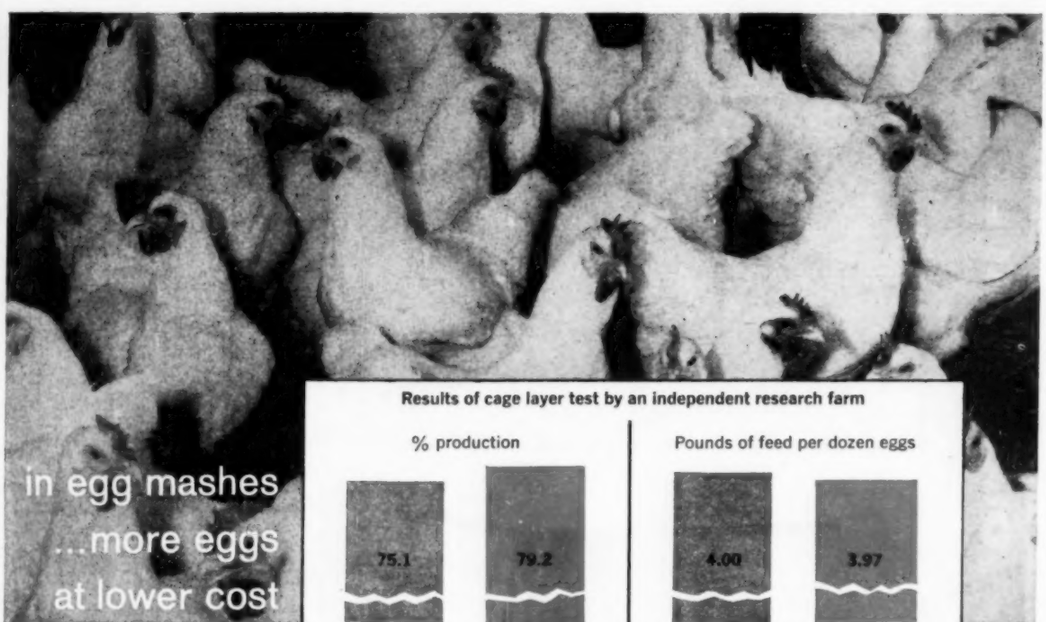
FEEDSTUFFS

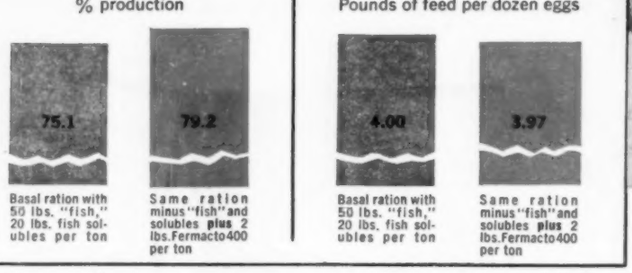
NOW...improve production

with Borden's fermacto 400



in egg mashes ...more eggs at lower cost with less animal protein

Results of cage layer test by an independent research farm


% production
75.1
79.2
Basal ration with 50 lbs. "fish," 20 lbs. fish solubles per ton
Same ration minus "fish" and solubles plus 2 lbs. Fermacto 400 per ton
Pounds of feed per dozen eggs
4.00
3.97
Basal ration with 50 lbs. "fish," 20 lbs. fish solubles per ton
Same ration minus "fish" and solubles plus 2 lbs. Fermacto 400 per ton

only 2 pounds of Fermacto 400 per ton (all-mash basis), costing 25¢ — replacing 50 pounds of "fish" and 20 pounds of fish solubles — increased layers in daily production by 4.1% and increased profit per ton by $3.36.

also available, where convenience is a factor —

Borden's 300 — economical egg mash supplement containing Fermacto 400 plus all essential micronutrients. At 5 lbs. per ton in all-mash "layer" BORDEN'S 300 costs only $1.15 per ton of feed fortified.

Write for complete data...

THE Borden COMPANY • FEED SUPPLEMENTS DEPARTMENT, 350 Madison Avenue, New York 17, New York

Virginia Dept. of Agriculture, 1123 State Office Bldg., Richmond, Va.

June 25-27—Canadian Feed Manufacturers Assn.; Bigwin Inn, Lake of Bays, Ontario; N. D. Hogg, Box 66, Station Q, Toronto, Ont.

July 10-14—Georgia Feed Assn.; General Oglethorpe Hotel, Savannah, Ga.; sec., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5, Ga.

Sept. 13-14—Grain and Feed Dealers National Assn. (work meeting for directors, committees and members), Minneapolis; exec. vice pres., Alvin E. Oliver, 400 Folger Bldg., Washington 5, D.C.

Sept. 16-17—National Feed Ingredients Assn.; Pick-Congress Hotel, Chicago, Ill.; sec., Peter W. Janss, 212 Equitable Bldg., Des Moines, Iowa.

Sept. 17-18 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; chm., Dr. E. L. Stephenson, Department of Animal Industry.

Oct. 6-8 — Northeastern Poultry Producers Exposition; Farm Show Building, Harrisburg, Pa.; sec., Dr. Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

Oct. 7-9—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

Oct. 14 — Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Irwin Olcott, Dawe's Laboratories, Inc., 4800 S. Richmond St., Chicago 32, Ill.

Oct. 14-15—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Agricultural Experiment Station Bldg., University of Kentucky, Lexington, Ky.

Oct. 20-21—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Nov. 12-13—Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Dr. F. W. Hill, Poultry Husbandry Dept., Cornell University, Ithaca, N.Y.

1958 Purina Feed Sales Total 4.75 Million Tons

MINNEAPOLIS — Feed sales for Ralston Purina Co., St. Louis, in 1958 totaled 4.75 million tons, and Purina dog chow climbed to the top position in sales of dry dog foods in the U.S., according to Raymond E. Rowland, president of the company. His remarks were published recently in Commercial West magazine, a banking business publication in Minneapolis.

He said also that all five major divisions of the company established record-breaking volume in sales and services.

"During the last quarter of 1958 the broiler industry suffered from overexpansion and low prices. Unselfish business statesmanship will be needed in 1959 to restore health to the broiler business," the company president said. "Production must be cut back to bring it in balance with consumer markets."

He went on to say that abundant grain crops in 1958 are likely to influence feed prices favorably for the feeder, and that low feed prices help make better feeding profits.

Mr. Rowland mentioned that the firm's newest and largest plant for manufacturing cereals and dog food will begin operation in Cincinnati, Ohio, next summer, and that several other new feed mills are on the drawing board or under construction.

"Our dealer organization and distribution systems are being modernized and strengthened day-by-day," he said.

"The continuing trend toward greater production efficiency on livestock and poultry farms offers expanding opportunities for the manufacturer of modern rations for livestock and poultry. We look for new Purina records to be set in 1959."

COW-TO-CARTON MILK FLOW PREDICTED

BROOKINGS, S.D.—The day when milk will flow from cow to carton in one continuous process may not be far off, says Dr. Loyd Glover, associate economist with the Agricultural Experiment Station at South Dakota State College. "When and if the dairy industry becomes completely integrated, the farmer will probably furnish his cows to cow pools at a dairy plant. Milking machines could then be connected to processing facilities. Milk would go through a continuous machine process, winding up in gaily-colored consumer packages," Dr. Glover explained. "Farming has changed vastly in the past 20 years, and it looks like there will be even greater changes in the next 20 years. Probably at no time in history has the agricultural economic situation been more dynamic than right now."

Moorman's Announces 2 Staff Appointments

QUINCY, ILL. — Two appointments were announced recently by E. H. Wilson, president of the Moorman Manufacturing Co., Quincy.

O. W. Randolph was named public relations director to head a new public relations department formed by the feed manufacturing firm. William B. Raufer was appointed to succeed him as sales promotion manager.

In making the announcement, Mr. Wilson said, "As our sales promotion and public relations activities have expanded, each calls for more and more attention. To plan properly for the future, we are rearranging these responsibilities accordingly."

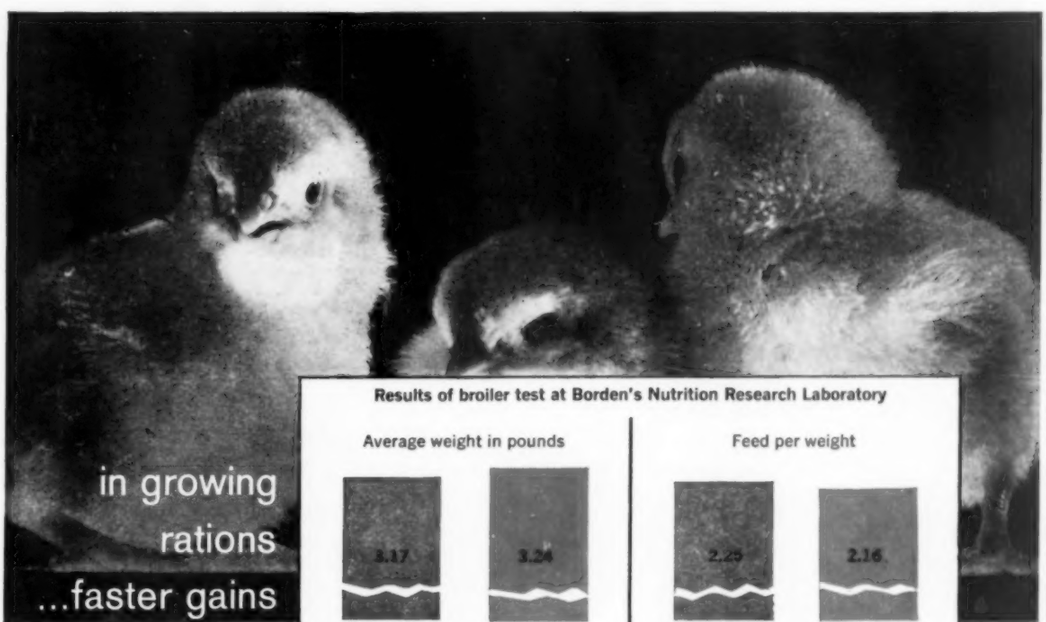
Mr. Randolph has been with Moorman's since graduation from the University of Illinois in 1937. He has been sales promotion manager since 1946. Mr. Raufer has been with the firm for the past seven years. A graduate of the University of Missouri, he was formerly with Successful Farming magazine and the Quaker Oats Co.

FEED FIRM ORGANIZED

BRIGHTON, COLO. — The Brighton Grain Co., Inc., has been organized here to deal in the grain and feed business. The firm has listed $200,000 authorized capital stock.

while sparing fish factor(s)

the cost-saving multiple blend of fermentation factors for complete unidentified growth factor fortification


in growing rations
...faster gains
at lower cost with less "fish"
Results of broiler test at Borden's Nutrition Research Laboratory
Average weight in pounds
3.17
3.24
Basal ration with 5% fish meal
Same ration less 2.5% "fish" plus 0.5% Fermacto 400
Feed per weight
2.25
2.16
Basal ration with 5% fish meal
Same ration less 2.5% "fish" plus 0.5% Fermacto 400

only 0.5% of Fermacto 400 per ton (all-mash basis) — replacing 2.5% "fish" — cut the feed weight ratio from 2.5 to 2.16 and increased profit per ton by $6.75.

also available where convenience is a factor—

Borden's OMNI-MIX — newly concentrated blend of whey, fish, and fermentation factors fortified with all essential micronutrients.

BETTER FEEDS THROUGH RESEARCH

Laboratories and test farms at Elgin, Illinois

REMEMBER TO ORDER
CHASE BAGS
There's None Better!

Working with Veterinarians in the Field

A South Dakota feed firm has developed a program of cooperation with veterinarians.

By Dr. W. E. Poley
Zip Feed Mills

EDITOR'S NOTE: A feed manufacturing company at Sioux Falls, S.D., Zip Feed Mills, Inc., has developed a special program for working with veterinarians. In the accompanying article, Dr. W. E. Poley, director of nutrition, describes the program of cooperation and outlines some case histories which show how it has worked out. This article is the text of a talk by Dr. Poley at the Midwest Veterinary-Nutrition Conference in Kansas City, sponsored by the Midwest Feed Manufacturers Assn. and the state veterinary medical associations of Iowa, Kansas, Missouri and Nebraska.

The Problem: From time to time we have received complaints either from the dealer or our salesman that a certain veterinarian is critical of our feed or leaves the impression with the farmer that the feed could probably be the cause of trouble whereupon a change in feeding program is recommended.

We are sure that few, if any, veterinarians intentionally incriminate the feed, but farmers choose to interpret the veterinarian's remarks as an indictment. Perhaps some feeders take this position to put the feed manufacturers or dealer on the spot, perhaps to get us to go to work and also help with the problem.

We have always scrupulously avoided having our sales or service men diagnose disease conditions. In this way we have kept out of the dog house with the veterinarian. On several occasions, however, we have either taken sick animals to the college veterinary department for diagnosis or have asked the farmer to do so; or we have suggested that the farmer call in his veterinarian. All these efforts did not seem to get the job done.

Our Policy With Veterinarians: Over six months ago we set up a policy that whenever a feeder was experiencing problems of either poor feeding results or sick animals, and this was made known to our dealer or salesman, we should ask the dealer to suggest to the feeder that he call in his local veterinarian for consultation and diagnosis. We requested that either our dealer or salesman be present when the veterinarian made his call. Our company then would pay the cost of this call and diagnosis. We did not offer to pay for the medication, vaccination or other treatment prescribed.

Our dealers and salesmen would accept this diagnosis of the local veterinarian and cooperate with him in every way possible in an effort to achieve good health and efficient production. We, of course, wanted it distinctly understood with the veterinarian that he would be in no way obligated to us in his diagnosis. In other words, if he honestly thought the feed caused the trouble, we would expect him to say so.

What Have Been the Results? The best way to answer the question, is to cite some of the experiences we have had.

Last May we set up several farm demonstration projects among swine producers. This required that our service men make monthly calls for the purpose of weighing pigs, and that the producers keep complete records as to feed consumption and cost of production.

One of our swine producers who was raising 160 pigs was unhappy because his pigs were not growing well; however, they were not scouring. Our service man asked the farmer if he would like to call in a veterinarian and to name the one he wanted. Accordingly the veterinarian arrived and posted two of the pigs. He could find nothing radically wrong, but indicated that he thought a low grade infection was present and prescribed medication in the drinking water for about two weeks. Furthermore it was agreed that an additional 50 lb. of hog concentrate should be added to a ton of grain mixture to give a little more protein. We might add that for at least a month or two the growth was quite slow, but then the pigs began to snap out of it and jumped from 0.7 lb. average daily gain per pig before treatment up to 1.4 and then finally up to 2 lb. Although the pigs were nearly seven months old before being marketed, the feed cost to produce a hundred pounds of pork was still quite low, and the total cost, including the veterinarian's bill for the medication and feed, amounted to $8.33 per 100 lb. of pork produced. The producer was well pleased and figured that his veterinarian accomplished a lot of good, and agreed that probably if we had not urged him to call in the veterinarian, the condition affecting his pigs might have grown worse and his profits reduced. He is again on our feeding program.

Case Reports: We had another case of a producer who had been feeding our pig starter and grower to about 120 pigs that he had weaned at about eight weeks of age. Shortly after weaning they began scouring. The feeder thought it was our feed which was causing the condition, stating that he thought it was too rich or too high in protein, so he changed to a mixing concentrate, but they still scoured. Our service man asked the farmer who his veterinarian was and offered to pay for the cost of a call if he would care to ask the veterinarian to make a trip to

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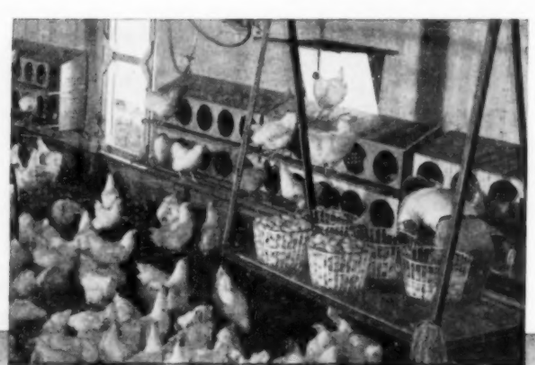
P. O. Box 66, Station C
TORONTO, ONT., CANADA

Arsanilic Acid in
(PRO-GEN®)

...fills more egg baskets all-season long!



Continuous high-level egg production plus improved feed efficiency

Here is a summary of the performance of Arsanilic Acid in practical feeding tests at five leading agricultural colleges . . .

	% More Eggs	% Less Feed per doz. eggs
S. Dakota Agricultural Experiment Station	1.8% to 4.2%*	0 to 7%*
Michigan State University	5.2%	3.5%
Texas Agricultural Experiment Station	7.9%	5.9%
Colorado Agricultural Experiment Station	13.2%‡	10.2%‡
University of Arkansas	7. %†	4.9%†
	14.8%††	11.2%††

*Range of four tests. ‡Five-month test. †Four-month tests. ††Combination of 90 Gm. Arsanilic Acid plus 15 Gm. furazolidone.

811525

the farm. It was agreed and our salesman accompanied the veterinarian. One of the sick pigs was posted. A severe case of "necro" was found, and drinking water medication, which included an antibiotic, was prescribed. The veterinarian advised the farmer that the filthy yards he had been using for 30 years were the chief cause of his trouble and that he should put the pigs on new ground. The veterinarian did make it a point to tell the farmer that the feed did not cause the trouble. One week after this call was made, our salesman went back to the farm and found that the scouring had stopped and the pigs were eating better.

A third instance involved a producer who was raising about 200 pigs. He had been a customer of ours for many years. He first had the veterinarian when the pigs started scouring at about eight weeks of age. A drinking water medication was prescribed, and the scouring stopped. These pigs had enteritis. The veterinarian recommended that a high antibiotic feed be used, and we mixed it according to his directions. Some weeks later another outbreak of scouring occurred. The farmer let it be known to the dealer that his neighbor had scouring troubles with his pigs but on our competitor's feed the scouring did not recur. Our dealer asked the farmer if he would like to call in a veterinarian and offered to pay for the call. The farmer indicated that he would like to try another veterinarian.

Remember, the first veterinarian was called and paid for by the farmer himself. We notified the first veterinarian of the farmer's wishes to have another veterinarian called, and we advised the first veterinarian of the second veterinarian's diagnosis. The second veterinarian suggested drinking water medication and confirmed the previous veterinarian's diagnosis. It was further agreed to continue the high antibiotic level feeding, and a careful analysis of the producer's feeding methods was made by our service man and the veterinarian. It was agreed that the larger pigs were getting most of the highly fortified supplement while the smaller ones were not able to get to the feeders because of crowded conditions. It was, therefore, suggested that the supplement be mixed with the grain so that all pigs would have an equal chance at the complete ration. Moreover, it was suggested that the smaller poor-doing pigs be put in a separate pen. Five weeks later the farmer and neighbor were visiting together and agreed that the pigs had completely recovered and were doing fine. We think if we had not had this veterinarian call, we would have lost a good customer. Furthermore, the first veterinarian is still the farmer's regular veterinarian.

Another case I should like to mention occurred in northwest Iowa, involving a poultry flock. The chicks just weren't doing well. The hatcheryman had prescribed drinking water medication, but this seemed to be of no help. The services of the veterinarian were offered the grower, who stated that the hatcheryman was taking care of the chickens. Several days later, however, the grower, being dissatisfied with the results, asked the dealer if his offer to furnish veterinary assistance was still good. Accordingly, the farmer named the veterinarian he would like to have called, and the visit was made to the farm. The veterinarian recommended discontinuing the medication prescribed by the hatcheryman as not being proper. Furthermore, it was too strong and the chickens were not drinking the water. In this case the veterinarian prescribed a vitamin addition to the drinking water and the chickens recovered promptly.

Working With Veterinarians: Because of our demonstrated interest in working with the veterinarians in our area, we have found that veterinarians are more willing to come to us for information and help whenever they are in doubt about a feed or feeding program.

For example, last winter a veterinarian came to me and stated that he had a bloat problem on several farms in a certain area, that this problem seemed to occur with certain hay used from certain soils. He suspected that it might be a question of low phosphorus or improper calcium, phosphorus and nitrogen balance. We were asked if we would mix up some experimental minerals which would be high in phosphorus and comparatively low in calcium. This mixture also had a liberal quantity of iodine present. For several months this mineral mixture was used on these farms, and there has been no bloat problem. Also a lumpy jaw condition among cattle disappeared within a few weeks after using this mineral mixture. The veterinarian was well pleased with the results obtained.

I might mention another experience we had wherein the veterinarian called to inquire why pigs wouldn't eat a feed mixture he had prepared according to recommendation. The formula required the use of a mineral mixture which was high in calcium and low in phosphorus. The calcium and phosphorus level of this starting ration had 1½% elemental calcium. This, of course, was about twice too much calcium, and was causing parakeratosis. This was a problem that had been bothering this veterinarian for a long time. By sitting down with him, showing him how the calcium and phosphorus were figured, it was immediately apparent to him that the ration was not in proper balance and his problem was soon solved.

Summary: To summarize, we should say that we think our cooperative program with the veterinarian is doing much to establish a common understanding. We are proving to the veterinarian that we are not medicine men and we know it, that we want to work with the veterinarian, and certainly, we are becoming more appreciative of the veterinarian's problems.

Moreover, we think the veterinarian may benefit by the thinking of our service men who are in a somewhat better position to analyze the farmer's problem as to feeding and management practices. Certainly this program is promoting friendship which helps us to work together with the producer toward the common goal of more efficient animal production.

FIRE DAMAGES MILL

RUDOLPH, WIS.—Defective wiring was blamed for a fire which destroyed the major part of the Badger State Feed Co. here. Damages were set at $40,000 to $50,000.

your laying feeds

...makes re-sale easier

all-season long!

Full egg baskets and the satisfied smile of your customers are the key to repeat sales on laying feeds.

For less than 40¢ per ton of complete laying feeds, Arsanilic Acid is proving to many feed manufacturers that it is a reliable aid to . . .

- continuous high-level egg production
- improved feed efficiency
- improved hatchability among breeding flocks
- improved feed sales

Arsanilic Acid can help your laying feeds meet the challenge of stresses and sub-clinical diseases that cause slumps in egg production . . . economically, too! (As laying flocks become larger and larger . . . and floor space per bird becomes smaller . . . this will become even more important).

Practical field tests at five leading Agricultural Colleges show that Arsanilic Acid increased egg production from 1.8% to 13.2%. Even at the lowest level of gain, this increase in egg production would net your customers 30 to 40 dozen more eggs per year from each 100 hens.

Arsanilic Acid in layer and pullet feeds gives outstanding results because of its low-cost and proved effectiveness. Plan now to take full advantage of this low-cost growth and production stimulant in 1959 in your Complete Breeder or Layer Feeds . . . Pullet Developer and Growing Feeds . . . Supplements or Concentrates . . . and Trouble Shooting Feeds.

New Technical Information Folder Available

For complete details on the value of Arsanilic Acid in Laying Feeds, including research and field tests, a new technical folder has been prepared for you. Ask for Bulletin No. 402—PRO-GEN® (Arsanilic Acid) for Pullet and Laying Feeds.

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It's continuous!

SOLULAC

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FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Old Dehy, She Ain't What She Used to Be

By Miss Eunice Hunt
Secretary, American Dehydrators Assn.

Dehydrated alfalfa used to be just plain dehydrated alfalfa meal. It was dusty, maybe slightly scorched, possibly running from 13 to 26% protein and from practically no carotene (provitamin A) up to over 200,000 I.U. per pound. It might even have some ground hay mixed in to stretch supplies. Practically all of it was shipped in carload lots in 10 oz. or even 8 oz. burlap bags or used coffee liners. The bags sifted in the car and in the nice, clean feed manufacturer's warehouse. The strings with which they were sewed messed up the floor and the feeders. Dumping those bags almost called for a gas mask.

The New — What Do We Have Now? Dehydrated alfalfa can be had as pellets, dry meal, oiled or greased meal, processed pellet meal of higher density and less dustiness, granulated material of uniform particle size, greased or plain. As to analysis, the buyer can specify and get anything from 13% protein with no guarantee as to carotene, through all gradations of those two factors up to 20% protein with 150,000 I.U. of vitamin A as carotene. As specialty items in small volume, he can get even higher quality.

The buyer no longer needs to pur-

(Turn to **OLD DEHY**, page 18a)

AMERICAN DEHYDRATORS ASSOCIATION CONVENTION SCHEDULE

Wednesday, Jan. 28

8:30 a.m.—Registration
Trade Show Exhibits

1:30 p.m.—Boat Trip to San Jacinto Monument

6:30 p.m.—South of the Border Party

Thursday, Jan. 29

9:30 a.m.—Welcome to Texas—Mayor Lewis Cutrer

10:00 a.m.—President's Address — Robert S. Pharo
Committee Reports
Election of New Directors

10:45 a.m.—Dehy's Future in Formula Feed—Dr. Roland Bethke

11:15 a.m.—New Day in Poultry Nutrition—H. R. Halloran
Adjourn—Lunch

2:00 p.m.—Dehy's Place in Ruminant Nutrition—Dr. H. O. Kunkel

2:40 p.m.—Dehy's Potential in Dairy Feeds—Dr. C. F. Huffman

3:20 p.m.—Dehy's Place in Swine Nutrition — Dr. W. S. McMillen

6:30 p.m.—Dinner Honoring New President—Bryan Blalock

8:30 p.m.—Research Round Table—Dr. J. R. Couch, Moderator
Ladies' Bingo

Friday, Jan. 30

9:30 a.m.—What's New in Pelleting—Frank Allen

10:00 a.m.—Tag It Right — Ralph Kneeland

10:40 a.m.—Quality Counts — Robert Fulton

11:20 a.m.—Plant Management and Costs—E. R. Burkholder
Adjourn—Lunch

2:00 p.m.—Potential for Dehy in Formula Feed—Dr. L. C. Cunningham

2:45 p.m.—Open Forum on Marketing

4:00 p.m.—How to Get Better—Joseph E. Burger

7:30 p.m.—Dinner Dance — Shep Fields' Rippling Rhythm Orchestra

WHAT'S INSIDE

The alfalfa dehydrating industry is given special attention in this section of Feedstuffs, which is published just prior to the American Dehydrators Assn. convention Jan. 28-30 at the Shamrock-Hilton Hotel in Houston, Texas. Well known college and industry authorities have written special articles for the section.

Forms of Dehy 2a
Dehy for Swine 4a
Price-Production Review 6a
Dehy for Poultry 10a
Dehy Research Reports 11a
Dehy for Ruminants 14a
Dehy for Chickens 24a
Dehy in Ruminant Nutrition 28a
Dehy for Dairy 34a
Growth of the Industry 38a

Convention to Stress 'New Day for Dehy'

HOUSTON, TEXAS — A look over the horizon at a "New Day for Dehy" will be taken by members of the American Dehydrators Assn. at their annual convention to be held at the Shamrock-Hilton Hotel here Jan. 28-30.

"New Day for Dehy" is the theme of the convention. Emphasis will be given to dehy's future in formula feeds and on production and marketing questions. The sales opportunities for dehydrated alfalfa will be given special emphasis.

Inspiration and entertainment both will be provided by speakers scheduled for the convention. These, plus a number of social events, are expected to make this convention the best in the association's history, according to Joseph Chrisman, executive vice president of ADA.

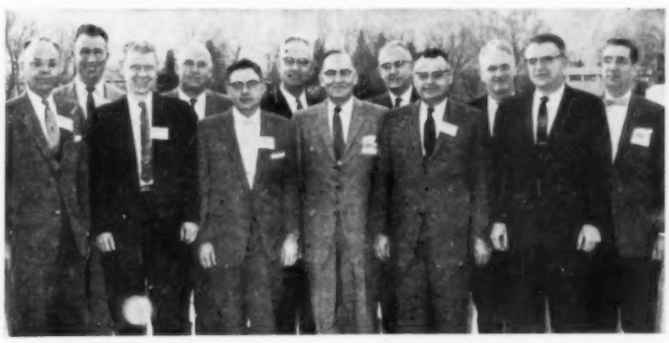
Dehy's Future

"Dehy's Future in Formula Feeds" will be the subject of an address by Dr. Roland Bethke, Ralston Purina Co., which is expected to set the tone for the discussion Jan. 29.

Following through on this theme will be a group of college and industry scientists who will discuss the use of dehydrated alfalfa in the rations for various types of livestock and poultry.

H. R. Halloran, Halloran Research

(Turn to **NEW DAY**, page 19a)



ADA RESEARCH COUNCIL—This group of scientists from agricultural experiment stations and industry advises the American Dehydrators Assn. on research and technical and scientific questions regarding dehydrated alfalfa. Left to right are: Harry Konen, feed consultant, Houston, Texas; Dr. C. Ray Thompson, Western Utilization Research & Development Division, Agricultural Research Service, Albany, Cal.; Dr. H. R. Bird, University of Wisconsin, Madison; Dr. W. M. Beeson, Purdue University, Lafayette, Ind.; Roy C. Elrod, W. J. Small Division, Archer-Daniels-Midland Co., Kansas City; Dr. Hugo Graumann, Agricultural Research Service, Beltsville, Md.; Herbert C. Schaefer, Ralston Purina Co., St. Louis; Dr. L. E. Hanson, University of Minnesota, St. Paul; Dr. H. Ernest Bechtel, Larro Research Farm, General Mills, Inc., Indianola, Iowa; Dr. W. W. Cravens, McMillen Feed Mills, Decatur, Ind.; Dr. H. S. Wilgus, The Ray Ewing Co., Pasadena, Cal., and Dr. Francis H. Bird, Eastern States Farmers Exchange, West Springfield, Mass. The council was formed in 1949 to serve as the guiding hand in the spending of the association's research funds. Dr. H. R. Bird was named chairman a year ago succeeding Dr. L. E. Card, who had served as chairman since the council's start.

ADA BOARD OF DIRECTORS—These men are the directors of the American Dehydrators Assn., pictured during their meeting held as part of last year's ADA convention. In the back row (left to right) are: D. B. Hodel, Prairie Dehydrating Co., Roanoke, Ill.; C. E. Stower, Worthington (Minn.) Dehydrating Co.; Jack Dillard, Nebraska Alfalfa Farms, Lexington, Neb.; J. B. Merryfield, Abilene (Kansas) Alfalfa Mills, Inc.; Kenneth Morrison, Morrison & Quirk, Hastings, Neb.; J. D. Cole, Cole Grain Co., Muskogee, Okla.; Charles P. Castle, Madera (Cal.) Milling Co., and J. M. Schrum, Sugarland (Texas) Industries, Inc. Left to right in the front row are: Eric A. Mengering, The Farm Bureau Cooperative Assn., Inc., Columbus, Ohio; R. G. Brierley, executive vice president, Archer-Daniels-Midland Co., Minneapolis; Robert S. Pharo, Keystone Dehydrators, Nazareth, Pa.; Ralph F. Beermann, Beermann Bros. Dehy, Dakota City, Neb.; Joseph Chrisman, executive vice president, ADA, and W. A. Donnelly, National Alfalfa Dehydrating and Milling Co., Lawrence, Kansas (Mr. Donnelly is no longer a board member). L. J. Schiller, Hayward, Inc., Oak Harbor, Ohio, has replaced him. Two other members not shown on the picture are Charlie R. Reyher (deceased) and Einer Knutzen, Chris Knutzen & Co., Burlington, Wash.

SPECIAL ALFALFA SECTION

THE DEVELOPMENT OF . . .

Improved Alfalfa Products

. . . FOR FEED MANUFACTURING

"The industry is now in a position to offer the feed manufacturer a choice of several products with vastly improved physical characteristics."

By Roy C. Elrod
Alfalfa Division, Archer-Daniels-Midland Co.

EDITOR'S NOTE: The feed manufacturer's need for dehydrated alfalfa products with more desirable handling facilities than the original bulky, ground, bagged meal led the industry on a search for improvements, Mr. Elrod points out in the accompanying article. He reviews the changes and improvements made in the physical nature of dehydrated alfalfa products during recent years, and expresses the hope that the industry will continue to improve its products, nutritionally as well as physically.

v v

There was a time when dehydrated alfalfa was available in just one form —the bulky, ground, bagged meal which was desired by the nutritionist for its nutrient contributions to feed formulas but which was not held in such high esteem by feed mill personnel because of its somewhat less than desirable physical characteristics. In recognition of the need of the feed manufacturer for dehydrated alfalfa products having more desirable handling properties, the alfalfa industry bent its efforts in this direction.

As a result of these efforts, the industry is now in a position to offer the feed manufacturer not one, but a choice of several products with vastly improved physical characteristics and with at least equivalent nutritive values.

Two-Pronged Approach

In the beginning, a two-pronged approach was taken by alfalfa processors in developing better handling and less dusty products. West Coast processors had experimented with the addition to dehydrated alfalfa meal of low levels (1 to 3%) of certain vegetable oils, such as rice oil, cottonseed oil, and, to a limited extent, soybean oil, with the objective of reducing both the dustiness of the meal and the dust loss in alfalfa mills.

SPECIAL ALFALFA REPORT

While oil-treatment was found to be satisfactory from the standpoint of dust control in alfalfa meal and resulted initially in improved appearance of the product, such treatment was comparatively uneconomical. In addition, the added vegetable oil apparently accelerated color deterioration in the meal and in some cases caused browning of meal after storage for 3 to 6 months. Carotene stability apparently was not affected, however (1).

Animal Fats Used

It was about this time that synthetic detergents were taking over the market in soap manufacture for substantial quantities of inedible animal fats, with the result that a surplus of these fats accumulated and were available at low prices. Investigation showed that animal fat could be utilized advantageously as a dust control agent for dehydrated alfalfa meal even though there were stabilization problems and production problems because of the higher melting point of these fats as compared with the liquid vegetable oils (2). With properly stabilized animal fats, it was found that low level applications (up to 1%) had little or no effect on carotene stability and that higher levels of fat addition (up to 5%) exerted a stabilizing effect on carotene during storage of dehydrated alfalfa meal (3, 4, 5).

Because of its obvious advantages for the feed manufacturer and the alfalfa processor as well, fat or oil-treated dehydrated alfalfa meal has become a standard product in use by the feed industry today.

Roy C. Elrod

Concurrently, with the work on fat and oil treatment of dehydrated alfalfa meal, another development was under way which also led the way for marked improvement in the physical characteristics and handling properties of dehydrated alfalfa thrcugh some basic changes in processing which at that time were considered revolutionary in nature. One alfalfa processor, by a process of pelleting and crumblizing, was able to produce a granular dehydrated alfalfa which was less bulky, more free-flowing and relatively dust-free. The ready acceptance of this new product stimulated its production by others in the alfalfa industry, and dehydrated alfalfa "granules," as they became known, became another standard prcduct along with fat or oil-treated meals.

Pelleting

Further changes in the processing of dehydrated alfalfa were made possible by the widespread adoption of the practice of pelleting the meal at the time of dehydration to permit bulk storage or bulk shipment to newly-developed inert gas storage facilities which, in most cases, were designed for bulk storage of dehydrated alfalfa in pelleted form.

By this time it was recognized that each of the two new alfalfa products —fat or oil-treated meal, and granules—had some short-comings even though both products were a major improvement over the dusty, nonpelleted, dry meal. Fat or oil-treated meal was superior in appearance, freedom from dust and in giving the desirable green color to finished feeds, but it still was bulky and poorly adapted for the bulk handling methods which were rapidly being adopted by the feed and alfalfa industries.

The granular product, on the other hand, proved to be well suited for bulk handling but, due to its granular nature, did not give a good green color in finished feeds. Instead, it resulted in a "speckled" appearance of the feed. Largely for this reason, granular dehydrated alfalfa has not achieevd the usage volume that was expected for the product initially.

Reground Pellet Meal

The rapidly-expanding application of pelleting and inert gas storage in the alfalfa dehydration industry led

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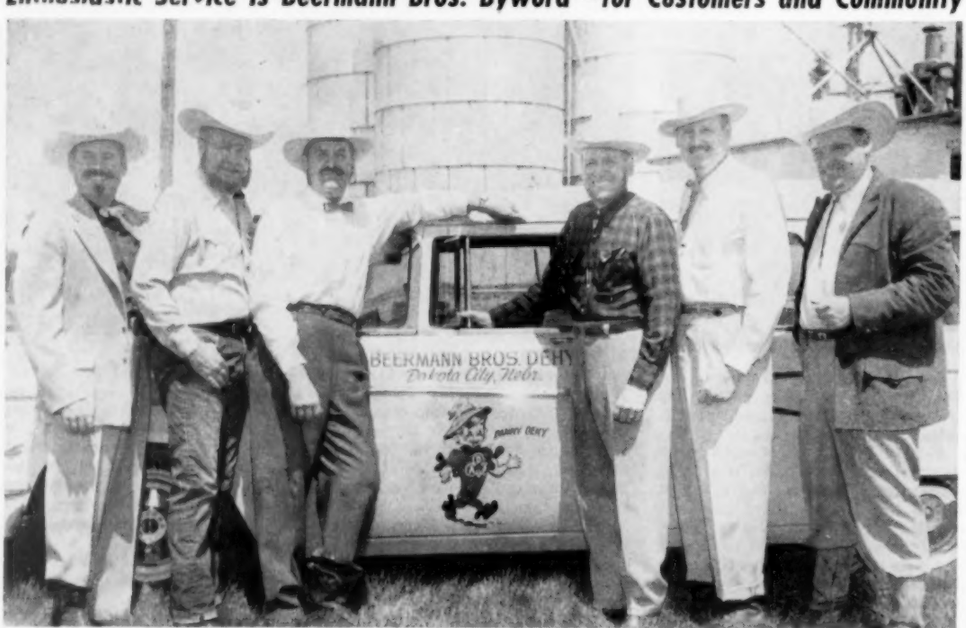

Ralph Mel Gordon Walt Dick Lowell

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to the introduction of yet another physical form of dehydrated alfalfa —reground pellet meal. Even though this type of product was a logical and perhaps unalterable result of bulk storage of dehydrated alfalfa pellets under inert gas, it has provided a product possessing physical characteristics which are a good combination of the best features of both fat or oil-treated meal (non-pelleted) and granules, but without the shortcomings inherent in those types of dehydrated alfalfa.

Reground pellet meal has an even greater density than the granular product, it colors feeds almost equally as well as non-pelleted meal, and is sufficiently free-flowing that it can be shipped, stored and handled in bulk quite successfully. Excellent dust control is accomplished with fat or oil treatment.

Carotene Loss

Quite often there is a question as to whether or not the rate of carotene loss is greater in dehydrated alfalfa taken out of inert gas storage than in meal not so stored. Our experience and the results of controlled storage experiments indicate that storage under inert gas does not affect subsequent rate of carotene loss. However, it should be kept in mind that there is some variation in the rate of carotene loss between different lots of dehydrated alfalfa and also that the rate of carotene loss is directly affected by environmental temperature and humidity conditions.

It also may be of interest to again point out that carotene stability in dehydrated alfalfa is not improved by pelleting, according to the conclusive results of previous research which have been published in the scientific literature (6, 7).

It is interesting to compare the densities of the various dehydrated alfalfa products, as shown in the accompanying table, for this provides a striking illustration of the change which has been made in this important physical characteristic.

TABLE 1. Bulk Density of Different Dehydrated Alfalfa Products

Product	Weight per cu. ft., lb.
Non-pelleted meal	19.0
Granular	29.0
Reground Pellet Meal	32.5
Regr'nd Pellet Meal, fat-treated	33.25
Pellets (¼" diameter)	44.0

The reduction in bulkiness of dehydrated alfalfa products is advantageous to the feed manufacturer as well as the alfalfa processor, because it reduces the amount of warehouse or bin storage space required for storage of this ingredient in the feed mill.

Reground pellet meal and granular dehydrated alfalfa are shipped routinely bagged or in bulk in regular boxcars and trucks; however, there is a definite trend to the use of hopper cars for bulk shipments to feed manufacturers who are equipped for hopper car unloading. Normally, a certain number of hopper cars are set aside for this use and are used only for shipment of dehydrated alfalfa products.

Word of Caution

It has been a practice for some feed manufacturers to purchase dehydrated alfalfa in pellet form and to grind the pellets to meal in their own plants. While it is true that this practice offers possible economies in purchasing and in-plant storage, it should be pointed out that there are some off-setting factors which may cancel out the apparent advantages.

One problem is shrinkage due to dust loss in grinding. This loss may be considerable in cases where dust collection systems are not adequate or are not designed for this purpose.

In addition, as is true with most any grinding operation, there is some degree of fire hazard. The amount of carotene destruction in the grinding process will not be excessive if the hammer mill is not crowded in excess of normal capacity. Carotene loss should not exceed 5% under good operation conditions. I would recommend that whenever tests are being made to determine carotene loss during grinding that an analysis be made on the pellets just prior to grinding as well as on the resulting ground meal.

This presentation is intended to review the changes and improvements made in the physical nature of dehydrated alfalfa products during recent years, with the objective of providing improved service to the feed manufacturing industry. It is the hope of this writer that the alfalfa dehydration industry will continue to improve its products, nutritionally as well as physically, in order that we may be of greater service to the growing feed industry.

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FEEDERS' SUPPLY OPENS

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The Current Place of Dehydrated Alfalfa in Swine Rations

"Dehydrated alfalfa meal appears sufficiently versatile and economical to continue in its present role in swine rations for the foreseeable future."

By Elmer Modeer
Staley Milling Co., Kansas City

Elmer Modeer

EDITOR'S NOTE: Mr. Modeer, nutritionist for Staley Milling Co., Kansas City, points out in the accompanying article that changes in the pattern of swine raising are having an effect on swine rations. They are creating needs that dehydrated alfalfa can answer. "As a low-cost, relatively stable source of vitamin A activity, its good level of other vitamins, especially vitamins E and K, its 'ash factor' or trace mineral composition, the ability of its protein to carry its weight, and as a UGF source, dehydrated alfalfa appears to be in a class by itself," he states. "Even its apparent disadvantages can be turned to advantage by helping to control total energy intake, as in gestation rations."

v v

The pattern of swine raising is currently undergoing rapid changes. The trend from casual sideline raising of market hogs by general farmers to increasingly specialized and larger units is accelerating. These changes are having a number of effects upon swine rations. Better management is characteristic of such operations, and this includes a better awareness of nutritional needs, so that rations are judged much more critically.

Furthermore, in moving the breeding herd into drylot or onto concrete from pastures, it is necessary that the rations contain the essential factors for good reproductive performance and health that otherwise would be furnished by the fresh forage.

Gestation Rations

The most critical rations in continuous, confined hog operations are those of the breeding herd. Gestation feeding of the brood sow and gilts is probably the most important single nutrition problem. Where silage is available it has successfully been employed, although, even here, the supplement feed with it needs dehydrated alfalfa as a constituent.

The factors present in grasses, silage and dehydrated alfalfa—whether they are "unidentified", mineral, vitamin or combinations—are one phase of the problem. Controlling the weight of the sows and gilts is another important requirement. Keeping the rate of gain in bounds can be accomplished fairly easily on pasture if silage is employed or if hand feeding methods are used, although in this last case, the use of at least 15% of dehydrated alfalfa is advisable, particularly when corn makes up the principal grain in the ration.

The labor-saving advantages of free choice feeding the breeding herd has caused it to be studied extensively. Use of 35% dehydrated alfalfa in the gestation ration lowers the energy levels to about the range usually recommended as suitable for free choice feeding. Hanson and his coworkers at Minnesota, however, used ordinary ground alfalfa hay and found it better than 15% dehydrated alfalfa plus 20% ground corn cobs.

It would be a useful research project to determine the reason for these differences. Corn cobs are not generally a satisfactory roughage for swine and it is likely that they, rather than the dehydrated alfalfa, were responsible for the poorer results. The use of another supplementary roughage, such as oat feed byproduct, or altering the proportion of the two, might improve the dehydrated alfalfa rations. At any rate, the use of about one-third low energy constituents containing varying amounts of dehydrated alfalfa will permit free choice feeding of sows and gilts, at least until the last month of gestation, when more energy may be required.

Dehydrated alfalfa is the ingredient that contributes the essential vitamin - mineral - unidentified factor complex needed for healthy reproduction otherwise obtained from pasture. It, more than any other ingredient, makes possible successful reproduction performance in confinement.

Starter Rations

The somewhat negative palatability rating of dehydrated alfalfa meal, together with its low metabolizable energy content, continues to exclude it from most pig starters and prestarters. In spite of the baby pigs' critical need for many of the factors contained in alfalfa, unless some means of correcting the palatability factor is found, it isn't likely that such rations will employ dehydrated alfalfa, despite its lower cost than such sources of growth factors as brewers dried yeast, corn steep water, fish solubles, or dried whey.

In pig grower rations, those for pigs from weaning (early or regular) to about 50 lb. weight, the optimum is less one-sided; probably about half such rations offered contain dehydrated alfalfa.

Growing-Finishing Rations

Dehydrated alfalfa is virtually a universal ingredient in growing-finishing feeds, whether supplements or complete rations. The use of at least 50 lb. per ton on the ration basis insures sufficient vitamin A factor, even on milo or barley rations.

Indeed, dehydrated alfalfa is as universally and inextricably intertwined in modern swine feeds in this country as is soybean oil meal and corn, whether for pasture-raised herds or highly geared "life cycle" multiple farrowing operations.

An understanding of the status of dehydrated alfalfa in modern swine production can be gained from the current recommendations of the swine department of Iowa State College.

In 17 master formulas each with 6 variations, the 17% dehydrated alfalfa content is as follows:

Feed or ration:	17% Dehy. Alfalfa
14% Gilt Developer Ration	15%
15% Complete Sow Pregestation and Gestation Rations	15-25%
32% Sow Supplements	20%
20% Corn Silage Balancers for Sows	10%
18% Complete Sow Farrowing Rations	10%
16% Complete Sow Lactation Rations	10%
20% Pig Pre-Starter Rations	0
16% Pig Starter Rations	0
18% Pig Starter Rations	0
16% Pig Grower Rations	0
14% Complete "Least-Time" G-F Swine Rations	2½%
12% Complete "Least-Time" G-F Swine Rations	2½%
10% Complete "Least-Time" G-F Swine Rations	2½%
35% Grower Supplement	10-15%
30% Finisher Supplement	15%
Complete Boar Rations—	
20 lb. to 100	2½%
100 lb. to 200	2½%
200 lb. up	15%
Swine Conditioner Rations—	
Up to 50 lb.	0
G-F & Breeding	2½-5%
"New" Feeding Pigs	2½-5%

As nutrition research advances, it tends to chip away at the dependence upon natural sources for essential nutrients. Just as synthetic and fermentation riboflavin removed dried skim milk from the "must" status and lowered feed costs, the isolation of each vitamin "growth factor" or trace mineral has tended to lessen the need of the feed industry for these natural sources.

However, as a low-cost, relatively stable source of vitamin A activity, its good levels of other vitamins, especially vitamins E and K, its "ash factor" or trace mineral composition, the ability of its protein to carry its weight, and as a "UGF" source, dehydrated alfalfa appears to be in a class by itself. Even its apparent disadvantages, low energy and less palatability, can be turned to advantage by helping to control total energy intake, as in gestation rations.

Dehydrated alfalfa meal, especially now that it has year-around availability and uniformity, appears sufficiently versatile and economical to continue its important role in swine rations for the foreseeable future.

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Dehydrated Alfalfa Price and Production Review

By Joseph Chrisman
Executive Vice President, American Dehydrators Assn.

EDITOR'S NOTE: Mr. Chrisman takes a look at the past year's prices and production in the accompanying article, and finds some "noteworthy departures from the historical pattern in week-to-week pricing of dehydrated alfalfa meal." He also notes that production in May through November is about 25,000 tons short of a year earlier. His article reviews production in the large production areas and takes a quick look at prospects for production this spring.

SPECIAL ALFALFA REPORT

The year 1958-59 (May through April) has presented some noteworthy departures from the historical pattern in week-to-week pricing of dehydrated alfalfa meal as reported by U.S. Department of Agriculture Market News Service at Kansas City. In the first six months of this fiscal year, excepting only July, the price per ton was lowest since pre-World War II for each month. By the end of October, the six-month average price was $6.76 below last year and $5.78 below the previous five-year average. At the close of December this year, some advance had been made and the $6.76 differential mentioned above was reduced to $4.47, while the $5.78 was cut down to $5.32. (See Table 1.)

Disappearance during the six months May through October was second highest in the history of the industry at 730,400 tons. Last year's disappearance for the same six months was 649,700 tons. The difference, 80,700 tons, just about equals the tonnage carried over at the end of April, 1958.

Recent Price Picture

It will be recalled that last year's price picture was a decided departure from the historical pattern. The accompanying Figure 1 shows that in six of the past nine years the

TABLE 1. Dehydrated Alfalfa Meal Price (Bagged at Kansas City)

	1953-54	1954-55	1955-56	1956-57	1957-58	5-year Average	1958-59	1958-59 Above (Below) 5-yr. Av.	1958-59 Above (Below) 1957-58
May ..	47.10	44.75	39.10	41.20	43.00	43.03	36.00	(7.03)	(7.00)
June ..	39.60	40.00	36.10	35.50	37.75	37.79	34.75	(3.04)	(3.00)
July ...	40.10	51.40	35.25	35.00	40.90	40.53	36.00	(4.53)	(4.90)
August .	39.50	48.10	36.20	40.25	47.75	42.36	35.50	(6.76)	(12.15)
Sept. ..	43.40	47.35	42.40	49.75	49.50	46.48	38.70	(7.78)	(10.80)
Oct. ...	51.25	54.75	49.25	47.70	49.70	52.53	47.00	(5.53)	(2.70)
Nov. ..	54.40	57.30	47.20	61.55	50.00	54.09	50.00	(4.09)	....
Dec. ..	62.70	59.60	50.50	63.10	48.20	56.82	53.00	(3.82)	4.80
8-mo. avg.	47.26	50.41	42.00	46.76	45.85	46.70	41.38	(5.32)	(4.47)
Jan. ..	73.60	64.25	50.60	65.00	45.10	59.71			
Feb. ...	75.50	66.25	48.00	67.00	46.10	60.57			
March .	67.20	61.40	46.10	66.00	44.60	57.06			
April ..	71.75	54.75	45.50	65.00	42.60	55.92			
4-mo. av.	72.01	61.66	47.55	65.75	44.60	57.57			
12-mo. av.	55.51	54.16	43.85	53.92	45.43	50.57			

TABLE 2. Dehydrated Alfalfa Production by States (May-November, 1957 and 1958—Tons)

	May-Nov. 1957	May-Nov. 1958	1958 Above (Below) 1957	Percent Change	Percent of Total Prod'n 1958
Arizona and New Mexico....	13,400	10,700	(2,700)	—20.15	1.07
Arkansas and Tennessee	19,100	11,900	(7,200)	—37.70	1.19
California	71,300	82,600	11,300	+15.85	8.22
Colorado	101,700	87,500	(14,200)	—13.96	8.71
Illinois and Indiana	20,000	16,400	(3,600)	—18.00	1.63
Iowa	27,500	23,500	(4,000)	—14.54	2.34
Kansas	132,400	131,600	(800)	— 0.60	13.11
Michigan and Wisconsin	19,500	16,700	(2,800)	—14.36	1.66
Minnesota	17,800	15,900	(1,900)	—10.67	1.58
Missouri	46,700	42,000	(4,700)	—10.06	4.18
Nebraska	410,500	391,300	(19,200)	— 4.68	38.97
Ohio	65,500	71,700	6,200	+ 9.47	7.14
Oklahoma	9,000	9,700	700	+ 7.78	0.97
Pennsylvania	23,600	34,200	10,600	+44.91	3.41
Texas	22,300	27,000	4,700	+21.08	2.69
Washington and Utah	9,500	10,000	500	+ 5.26	1.00
Other States	19,700	21,400	1,700	+ 8.63	2.13
Totals	1,029,500	1,004,100	(25,400)	— 2.47	100.00

From Agricultural Marketing Service USDA Reports.

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low price point was reached in June. In the remaining three years, the low was reached in July twice and in August once.

In five of the nine years the high point was reached in February. One exception occurred when price ceilings were withdrawn in 1952. The peak in 1953 and 1954 occurred a month early, in January. But last year, unprecedentedly, the peak was reached in November and the price curve dropped substantially between then and February and, in fact, continued to decline right through until June of this year with some brief strengthening in the normally high month of February.

Without making any statistical analysis it seems apparent that the average annual price has been on a descending line ever since Korean price ceilings were dropped, with the slope line tending toward the horizontal in recent years.

The end to be hoped for is a lowering of the high points with a corresponding elevation of the lows. The 18 weeks this summer when the price never exceeded $36 at Kansas City and even got down to a new low of $34 was well nigh disastrous for some operators who lacked both storage facilities and adequate capital.

Production

Production has shifted in the past several years so far as state percentages of the U.S. production are concerned, but the five states of Nebraska, Kansas, Colorado, California and Ohio produced about ¾ of the total in 1952 and do the same today. For comparison, observe:

	% of U.S. Production	
	1958	1952
Nebraska	39.0	31.2
Kansas	13.1	15.2
Colorado	8.7	13.9
California	8.2	9.8
Ohio	7.1	4.7
Total	76.1	74.8

Nebraska has gained the most and apparently Colorado has lost most heavily of the five states. Ohio, too, shows a substantial gain since 1952.

Total production in May through November is about 25,000 tons short of a year ago. This shortage could persist or it could easily be overcome if a good season is experienced in the Southwest during December through April or if the San Joaquin and Sacramento Valley plants enjoy a reasonably good spring run. In 1958, these northern California plants were hard hit by untimely rains in March and April. In spite of this, the state increased its production over last year by almost 16%.

Nebraska operators complained of a bad year this summer, yet the state as a whole lost less than 5% of their last year's total. (Table 2.)

As was to be expected from monthly reports of the area, Arkansas and Tennessee lost most heavily percentagewise. Texas figures reflect the easing of the big drouth of recent years —up 21%. Pennsylvania made the largest percentage gain—up 44.9% over a year earlier.

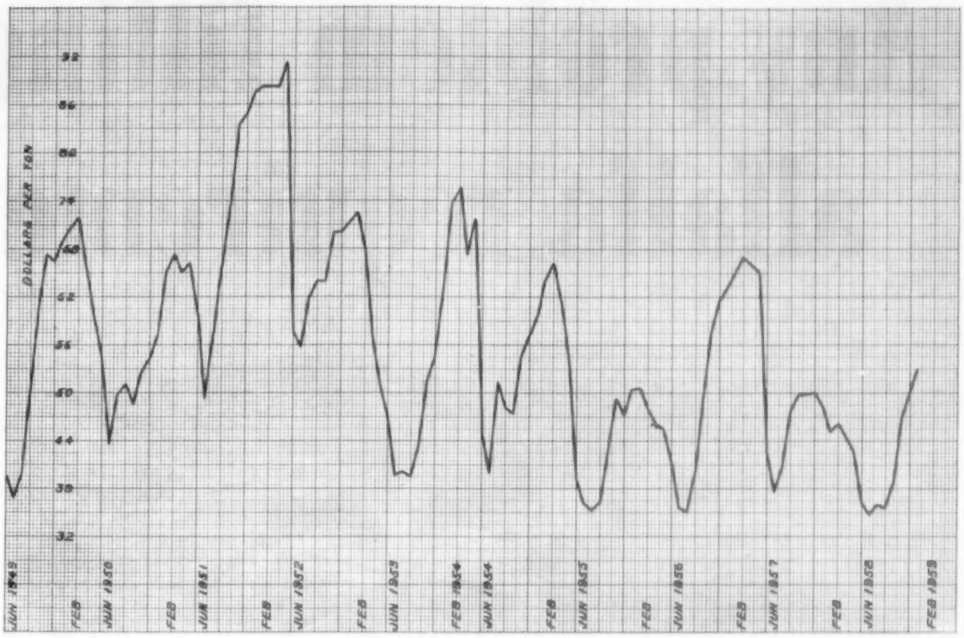
Illinois and Indiana had rain and more rain and the effects are shown in their substantial loss, 18%, of production compared to last year.

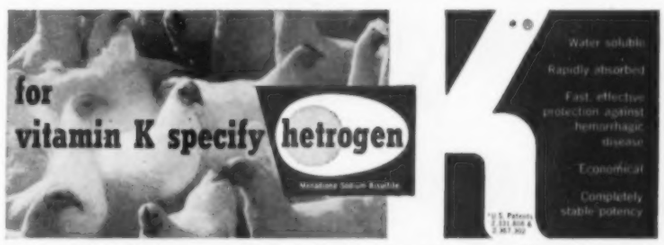
Nebraska-Kansas Outlook

Reports of alfalfa being plowed under in Nebraska and Kansas this fall and anticipated further plowing down in the spring make it appear that the operators in those states will have to hustle for hay. This past spring saw baled hay in stacks selling at below the actual cost of mowing, raking, baling and stacking in the Platte Valley. This is a discouraging situation for the alfalfa farmer. Even in mid-December of 1958 the Weekly Hay Market Review, USDA, notes that offerings were at $8 to $10 at bale piles on farms.

This reduction in alfalfa acreage available to the dehydrators could well be turned into an advantage through improvement in the quality of alfalfa processed. If plans are carefully made in advance to avoid overtime labor, that, along with the increase in efficiency and decrease in repair and maintenance, would tend to make costs per ton no higher for the better quality material put in the car or storage.

FIGURE 1. Months of high and low prices for dehydrated alfalfa meal, bagged, Kansas City. (From AMS-USDA)





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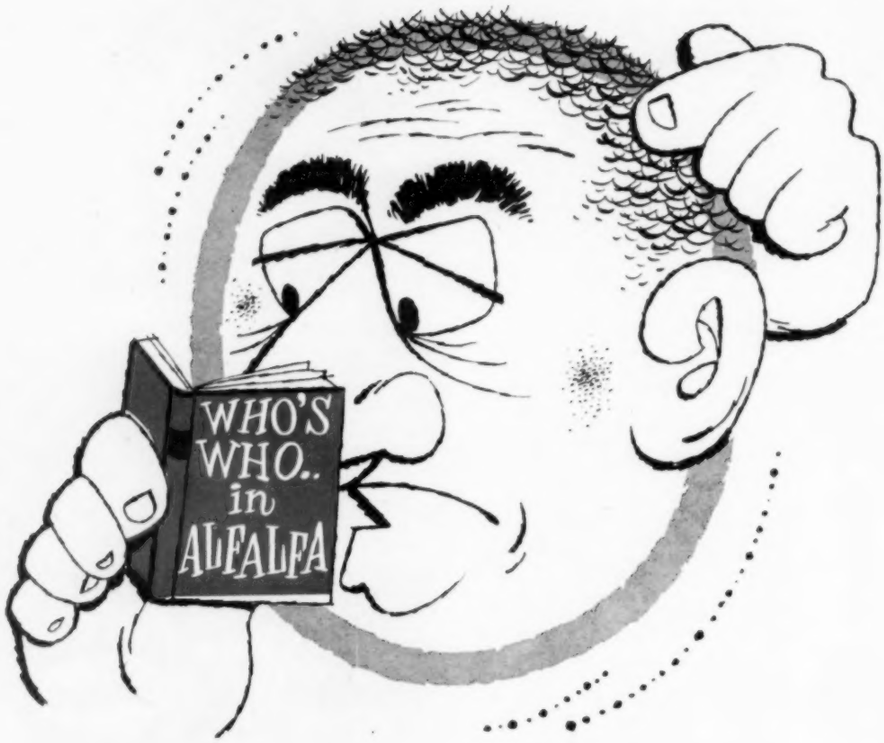

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Aphid Mutations Live On Resistant Plants

WASHINGTON—A strain of the spotted alfalfa aphid, capable of surviving and reproducing on several non-dormant clones (cuttings) of alfalfa previously resistant to populations of the insect, has been observed and tested by U.S. Department of Agriculture entomologists.

This work, carried on by George R. Pesho and Frank V. Lieberman of USDA's Agricultural Research Service, and W. F. Lehman of the University of California, was reported recently by Mr. Pesho at the Salt Lake City meeting of the Entomological Society of America.

The new tolerant strain survived and reproduced on three alfalfa clones, all parents of the aphid-resistant variety Moapa. In tests at El Centro and Bakersfield, this aphid strain did not show differences in reaction to five other Moapa parent-clones or to any of the five parent-clones of Lahontan, another resistant alfalfa.

The scientists do not believe this aphid strain will do any great amount of damage to Moapa plantings unless or until it becomes dominant in the aphid population of an area.

Probably produced by mutation, the new strain was first found near El Centro. A clone of Nevada-1018 was seen to show all symptoms of susceptibility to the spotted alfalfa aphid. This clone has been present during repeated and prolonged attacks of the insect for three years without any ill effects.

Aphids from this resistant clone were tested many times in comparison with aphids from other sources to make sure that a new strain existed and to make certain that no other reason was responsible for the aphid's ability to live on these plants.

KEITH GIDDINS DIES

CASTROY VALLEY, CAL.—Keith V. Giddins, 40, warehouse sanitation consultant, died suddenly of a heart attack recently. He had worked with feed and grain as well as related industries.

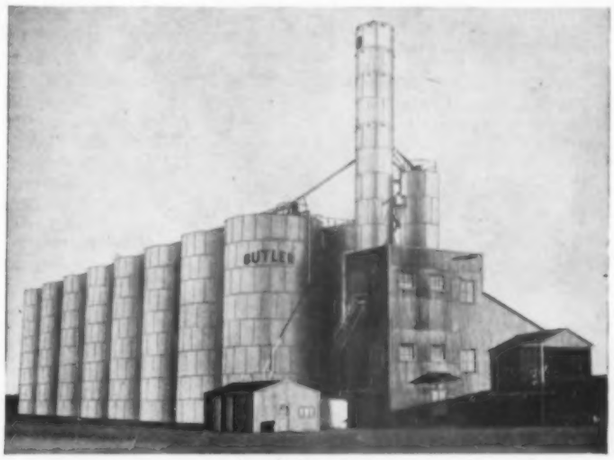
Large Feed Mill Being Built in South America

MUNCY, PA.—Construction will soon get underway on South America's largest feed mill, it has been announced by officials of Sprout, Waldron & Co., Inc., Muncy.

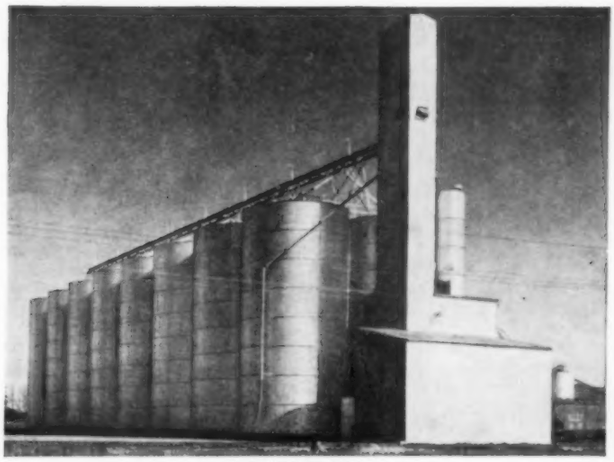
The new mill, which will be located in Valencia, Venezuela, will form part of a multi-million dollar expansion program now being carried out by Protinal, C.A., under the direction of its president, Oscar W. Romer.

Designed and engineered by Sprout-Waldron, the new mill will supply most of Venezuela's animal and poultry feed requirements, officials said.

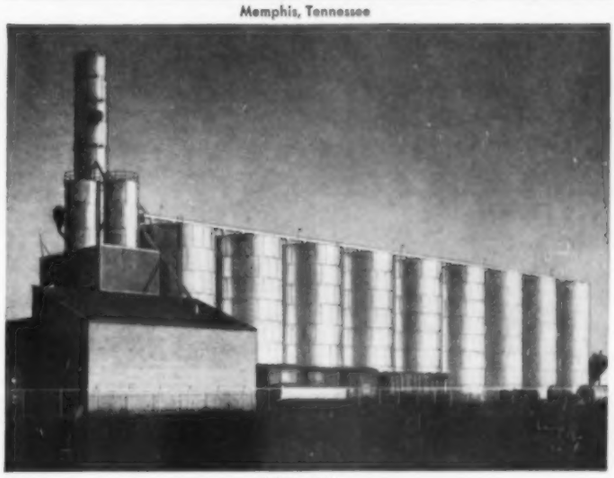
STORING DEHYDRATED ALFALFA IS DIFFERENT...



Memphis, Tennessee



Garden City, Kansas



Toledo, Ohio

Butler solves special storage requirements at three new plants for National Alfalfa

Ordinary storage won't do for alfalfa pellets. To prevent the loss of Vitamin A and protein in dehydrated alfalfa, the pellets must be stored in an inert gas atmosphere. This means the storage structure must not only protect the alfalfa from weather, moisture and pests, but also must be so tightly constructed that it can maintain gas under pressure.

Butler bolted steel tanks have solved this problem to the complete satisfaction of National Alfalfa Dehydrating and Milling Company. After Butler built the first dehydrated alfalfa plant for National in Garden City, Kansas, the company was so pleased with the plant's tight construction and economy that Butler was asked to build two almost exact duplicates—one in Memphis, Tenn., and the other in Toledo, Ohio.

Perhaps you, too, can benefit from Butler's unequalled experience in storage facilities for dehydrated alfalfa—and from the weather-tight safety Butler builds into every tank. Next time you need storage for grain, feed or ingredients, profit from Butler's quality and localized construction service. Contact the Butler contractor nearest you, or write us direct.

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Dehydrated Alfalfa Meal in Today's Poultry Rations

"Perhaps no ingredient used in modern poultry feeds is more versatile than dehydrated alfalfa meal in contributing toward the manifold nutrient requirements of chickens and turkeys."

By Dr. H. J. Almquist
The Grange Co., Modesto, Cal.

EDITOR'S NOTE: The versatility of alfalfa meal as an ingredient in poultry rations is surveyed in the accompanying article by Dr. Almquist. He points out that alfalfa meal has relatively high quality protein with indispensable amino acids close to the balance of those required by the growing chick. Also included are vitamins A, K, E and the B-complex, all of value in poultry rations, and the ingredient is also a good source of pigment for the desired yellow color in broilers. Added to these are unidentified growth factor or factors. "Therefore," concludes Dr. Almquist, "we cannot be certain that all the desirable nutritional factors in dehydrated alfalfa meal can be substituted in other forms."

Perhaps no ingredient used in modern poultry feeds is more versatile than dehydrated alfalfa meal in contributing toward the manifold nutrient requirements of chickens and turkeys.

The protein of alfalfa is of relatively high quality, containing proportions of the indispensable amino acids which are close to a balance with the requirements of the young growing chick, as indicated in table 1. This comparison does not mean that dehydrated alfalfa meal can be used to provide all the protein for the chick, but rather that the alfalfa protein is well adjusted to the needs of the chick.

SPECIAL ALFALFA REPORT

Dehydrated alfalfa meal provides a wide assortment of vitamins. Provitamin A, beta-carotene, may be contained in amount up to about 150 mg. per pound, equivalent to 250,000 I.U. of vitamin A by the usual conversion factor. Of course, the amount of carotene is related to production conditions, preservative effects of antioxidants, age of sample and storage conditions. The technology for prevention of carotene losses is steadily improving.

Years ago the author showed that as little as 2% of good quality dehydrated meal would provide sufficient vitamin K for the chick.

Vitamin E

Much recent controversy has centered on the content and availability of Vitamin E in dehydrated alfalfa. This work has been reviewed thoroughly by Kohler (1). Certain early studies had shown that the tocopherols in alfalfa meal were practically all alpha-tocopherol, the most potent natural form of vitamin E. Despite this fact, it appeared in certain studies that the absorption of the vitamin E from the digestive tract, in other words the availability of the vitamin, was quite low. It was pointed out, however, that there were reasons to believe that the vitamin had, in part, been destroyed prior to absorption. Several later studies have proven that the vitamin E of dehydrated alfalfa meal can be utilized efficiently for purposes of chick growth, storage in the liver and prevention of such vitamin E deficiency states as nutritional encephalomalacia and edema. Such positive demonstrations are much more convincing than are negative ones which may have resulted for reasons perhaps unknown.

Yellow pigmentation of broilers had been stressed as a market advantage, although this feature of coloration adds nothing to the value of the broiler as human food. The principal pigmenting factor in common feedstuffs is xanthophyll, and related compounds. It has long been known that corn is a good feed to color chickens yellow. Recent comparisons have indicated that dehydrated alfalfa meal has about 10 times the pigment content and roughly 10 times the pigmenting power of yellow corn. Evidently, there is little doubt concerning the availability of the xanthophyll in dehydrated alfalfa meal. For a further discussion on pigmentation the reader is referred to an article by Ferguson (2).

These fat-soluble components of dehydrated alfalfa meal seem to occur in fairly definite relation to each other in good quality meals, so that for each milligram of carotene there will be present 2.1 to 2.9 mg. of xanthophyll. 1 to 1.3 mg. of tocopherol and about 1 microgram of vitamin K.

B-Complex Vitamins

All of the B-complex vitamins, choline and vitamin C are present in dehydrated alfalfa meal in significant quantities. For poultry feeding, dehydrated alfalfa meal may be an especially prominent source of riboflavin, pantothenic acid, pyridoxine, and folic acid, all members of the B-complex.

Many reports have appeared in recent years concerning "unidentified growth factors" for poultry. In some cases the experimental results were due to failure in supply of some known nutrient in the test diets; in other cases possibly intestinal microorganisms were involved. At least two of the "UGF" have been chased out into the open and identified as the mineral elements, molybdenum and selenium. However, it appears that there still remains one or more in the UGF fraction, and dehydrated alfalfa meal is prominently mentioned as a source of these. Therefore, we cannot be certain that all the desirable nutritional factors in dehydrated alfalfa meal can be substituted in other forms.

A limitation of dehydrated alfalfa meal for high calorie feeds is the somewhat low metabolizable energy value which curtails the amount that can be employed in such feeds to approximately a 5% maximum. Where high caloric content is not a prime requisite, the meal is well tolerated at levels of 10% of the diet, and at times more, for chickens. Turkeys seem to handle dehydrated alfalfa meal very well and can use relatively higher levels than are given to chickens.

Not many years ago it was considered necessary for good results with breeder fowl to provide fresh greens. This nuisance has been universally dispensed with through the use of good quality alfalfa meals.

A recent trend in the manufacture of dehydrated alfalfa meal has been the development of equipment to separate out the stemmy and high fiber components with the objective of providing a uniform meal meeting certain guarantees on protein and fiber, and higher in vitamin content.

TABLE 1. Indispensable Amino Acids in Alfalfa Compared with Requirements of Young, Growing Chicks

Indispensable Amino Acid	Percentage Present in the Crude Protein of Alfalfa	Percentage Required in the Crude Protein of a Chick Diet
Arginine	5.0	6.0
Histidine	2.0	1.5
Lysine	5.0	5.0
Methionine-Cystine	3.8	4.0
Tryptophan	2.2	1.0
Leucine	7.0	7.0
Phenylalanine	5.1	3.0
Isoleucine	5.0	3.0
Threonine	4.6	3.0
Valine	5.9	4.0
Glycine	5.0	5.0

Dr. H. J. Almquist

REFERENCES

1. G. O. Kohler—Utilization of Vitamin E in Alfalfa; Western Regional Research Laboratory. Report on Fifth Technical Alfalfa Conference, Colorado State University, Fort Collins.
2. T. M. Ferguson (ibid)—Alfalfa for Pigmenting Poultry. See also "Feeds Illustrated," September, 1958.

Officers Elected By Wirthmore Company

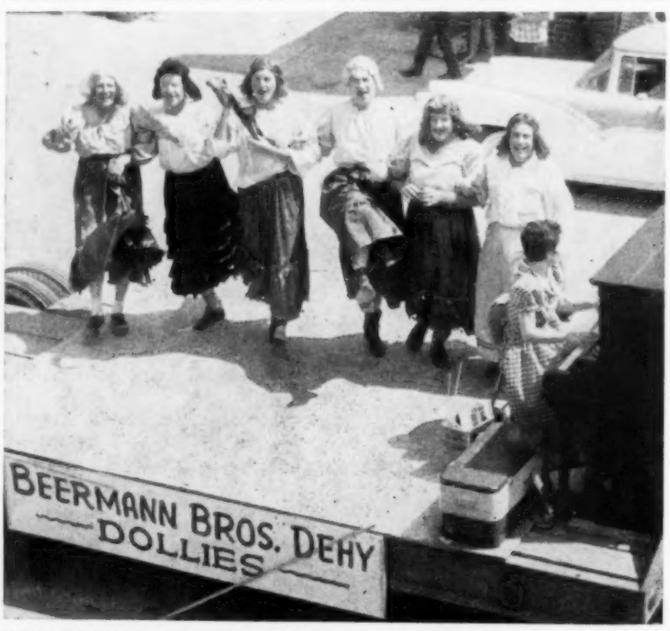
WALTHAM, MASS.—Among new officers elected at the annual meeting of stockholders and directors of Wirthmore Feeds, Inc., Waltham, was R. E. Burns, controller, who was named assistant treasurer.

The following were reelected directors for 1959: Robert F. McLeod, president; Granville M. Bond and Charles A. D. Worthing, executive vice presidents; John E. Sawyer and Silas R. Renaudette, vice presidents; William H. Gamble, senior vice president of Corn Products Co., and Howard C. Harder, controller of Corn Products. (Wirthmore Feeds is a subsidiary of Corn Products.)

At the same time the directors of Wirthmore's affiliated companies elected John M. Schuhle president and Donald K. Bishop vice president of the Cutler Co. and W. N. Potter Grain Stores, Inc. Mr. Burns was named treasurer.

Albert Dickinson, Feed Executive, Dies at 63

ROCKFORD, ILL. — Albert Boyd Dickinson, 63, Lake Geneva, formerly president of the Albert Dickinson Feed Co., Chicago, died recently at Swedish American Hospital, Rockford. He is survived by his wife, Byrnice, five daughters and a sister. Mr. Dickson was retired.



BEVY OF BEERMANN BEAUTIES BRINGS BLINKS—Residents of the area around Dakota City, Neb., blinked their eyes in disbelief during a centennial celebration parade last fall. All dressed up in 19th century female frontier garb, complete with big wigs, were the six Beermann brothers of Beermann Bros. Dehy. The "Dollies" interrupted their singing and dancing occasionally to leap from the truck and bestow lip-stick smears upon innocent bystanders. From left to right are Walt, Mel, Dick, Gordon, Lowell and Ralph. The boys admit that their stunt didn't sell much dehydrated alfalfa, but they agree that it was lots of fun.

Reports on Current Alfalfa Research

EDITOR'S NOTE: A basic aim of the American Dehydrators Assn. is to find new uses for dehydrated alfalfa and to bring new knowledge on the product. This is sought through a program of research work fostered by the association. Guiding the research is an Alfalfa Research Council formed several years ago. The council is made up of scientists from agricultural experiment stations and industry who advise the association on research and technical questions regarding dehydrated alfalfa. Under the guidance of the council, the ADA has been sponsoring research work at agricultural experiment stations with grants-in-aid. During the past year, work has been under way at several stations. Following is a summary of some of this work.

California

PROJECT: Studies on dehydrated alfalfa as a source of energy and protein.

LEADER: J. H. Meyer.

PLACE: University of California Agricultural Experiment Station, Davis.

The alfalfa research at the California station has four main objectives:

1. Influence of stage of maturity on the value of alfalfa hay as a source of energy.
2. Influence of method of harvesting on the quality of alfalfa hay.
3. Study on the reasons for the increased feed intake of alfalfa when ground and pelleted.
4. The value of high protein, dehydrated alfalfa as a supplemental feed for sheep and cattle grazed on the dry summer ranges of California.

One of the first factors that can be manipulated to improve the quality of alfalfa is that of choice of the maturity stage at which the alfalfa is harvested. Our studies have indicated that alfalfa harvested in the bud stage is superior as a source of energy for fattening lambs. The greatest change in feed value is when blooming commences. Here, there is a rapid decline in the value of the alfalfa due to lignification. After approximately 10% of the stems reach the flowering stage the quality is not as greatly influenced by advancing maturity.

SPECIAL ALFALFA REPORT

A further consideration is that yield generally declines if hay is harvested continuously in the bud stage. Therefore, it appears that alfalfa should be harvested at about the 10% bloom stage which will be commensurate with the greatest yield of protein and energy per acre. Nonetheless, if a particularly high protein feed is needed for range supplements, then harvesting at the bud stage is indicated.

The method used in harvesting alfalfa has a great influence on its quality. In all experiments, dehydrated alfalfa was superior to the same hay when it was suncured. This is reasonable since there is less chance of leaf and fine stem loss when the alfalfa is harvested green and taken to the dehydrator rather than allowing it to dry in the field and harvesting hay later which subjects it to a much greater leaf and fine stem loss.

Pelleted alfalfa has consistently produced greater gains by lambs than chopped alfalfa fed to lambs. In the past this has been due to a greater daily feed consumption. The reason for this increased feed consumption appears to be tied up with a greater rate of digestion in the rumen. Our data indicates that there is a greater rate of fatty acid production and cellulose digestion. Consequently, this greater rate of digestion allows faster rate passage to the digestive tract of the animals. This would then allow the animals to consume more feed and hence make greater gains.

Pelleted dehydrated alfalfa with a protein content of 22% or higher has shown promise as a range supplement to moderately grazed dry summer ranges. Sheep fed high protein alfalfa made gains approaching the gains of those fed the mixture of 50% barley and 50% cottonseed meal. Animals on heavily grazed dry ranges, however, need more protein.

Michigan

PROJECT: The nutritive value of artificially dehydrated alfalfa pellets for dairy cattle.

LEADERS: C. F. Huffman, C. A. Lassiter, L. D. Brown and C. W. Duncan, Departments of Dairy and Agricultural Chemistry.

PLACE: Michigan State University, Kellogg Farm, Hickory Corner, Mich.

The purpose of this study is to evaluate dehydrated alfalfa pellets as a roughage supplement to a grass hay-corn silage ration when fed to dairy cattle. Information is needed in this area since there is a trend toward a greater use of corn silage in the rations of dairy cattle, and quite often the dairyman is faced with the problem of low quality hay. Information was needed as to whether the performance of such a ration could be improved by feeding a limited quantity of dehydrated alfalfa pellets.

These studies have the following objectives: (1) to obtain information on the value of artificially dehydrated alfalfa pellets as a supplement to a grass hay-corn silage-grain ration for milk production; (2) to determine the effect of supplementing a hay-corn silage-grain ration 30 days prior and 60 days following calving on the peak of milk production; and (3) to observe the time required for cows to consume artificially dehydrated alfalfa pellets fed with grain in a milking parlor. Data were only obtained on the first objective the first year. This study is due to continue for three more years.

Sixteen Guernsey cows were selected that were at least 60 days in lactation and divided into four comparable groups. All cows were fed 40.0 lb. of corn silage and 12.0 lb. of a medium quality timothy hay per day after adjusting for the amount of alfalfa pellets fed. Grain was fed according to production (USDA rates for feeding grain) after correcting for the amount of grain in the corn silage. Group 1 cows were fed 12.0 lb. of hay and no pellets; Group 2, 11.25 lb. of hay and 0.75 lb. of pellets; Group 3, 10.50 lb. of hay and 1.5 lb. of pellets, and Group 4, 9.0 lb. of hay and 3.0 lb. of pellets per day. Body weights were taken monthly, milk weights daily, butterfat percentage of milk twice monthly, and feed intake values daily.

The first study is shown in Table 1. (Page 12a.) Due to the limited number of cows, the initial milk production values were not exactly the same for each group of cows, thus bearing some influence on the total amount of milk produced over the 90-day trial. However, these data do show that the feeding of dehydrated alfalfa pellets did improve the performance of the cows. Since there were differences in initial milk production, the persistency values are probably the most reliable of those presented. All levels of pellets improved the persistency rating of the cows but very little difference existed among pellet levels. Based on these data, it would appear that the 0.75 lb. level of pellets was as beneficial as the higher levels of pellets.

The cows fed the high level of pellets tended to gain slightly more in body weight than any of the other groups, but these data are inconclusive. Total roughage dry matter consumption tended to increase as the level of pellets increased in the ration, but these data are also very inconclusive.

It should be remembered that these data are very preliminary and should not be considered conclusive and these trends may change as more data are collected.

New York

PROJECT: Studies of the metabolizable energy value of alfalfa products for poultry.

LEADER: F. W. Hill.

PLACE: Cornell University, Ithaca, N.Y.

It is generally recognized that the energy value of alfalfa meals limit the extent of their use in rations for non-ruminant animals, such as poultry. The positive nutritional values of alfalfa meals are such that they can make an important contribution to the vitamin, protein and trace mineral content of rations, however, so that their use within the limitations imposed by energy considerations is amply warranted. In order to evaluate more fully the contributions of

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TABLE 1. Summary of Alfalfa Pellet Experiment

	Rations 1	2	3	4
Milk Production:				
Initial milk (lb./cow/day)	25.2	29.0	31.2	27.4
Initial 4% FCM (lb./cow/day)	30.2	32.8	32.3	31.2
90-day milk (lb./cow)	1633.7	2146.8	2213.9	1977.0
90-day milk (lb./cow/day)	18.2	23.8	24.6	22.0
90-day 4% FCM (lb./cow)	1882.5	2457.8	2342.4	2226.5
90-day 4% FCM (lb./cow/day)	20.9	27.3	26.0	24.7
90-day average fat test	5.0	4.9	4.4	4.9
Average persistency	81.7	88.2	87.5	88.2
Body Weight:				
Initial body weight	908	908	910	851
End body weight	920	895	915	881
Body weight changes (lb./cow/90-day)	+12	—13	+5	+30
Feed Consumption:				
Grain consumption (lb./cow/day)	2.9	4.9	4.5	3.9
Hay consumption (lb./cow/day)	10.4	8.4	9.2	8.0
Alfalfa pellets (lb./cow/day)	0.0	0.7	1.5	2.9
Silage consumption (lb./cow/day)	36.4	37.3	36.7	36.6
Roughage D. M. consumption (lb./cow/day)	20.2	19.4	20.7	21.0

alfalfa to poultry nutrition, better understanding of its metabolizable energy value in relation to gross composition was considered to be necessary. The objective of the studies conducted for the past two years at Cornell has been to supply this information for poultry.

All the work completed to date has been conducted with young chicks, with the exception of an experiment specifically designed to study the influence of age on the measurement of energy values in alfalfa, which involved comparisons of chicks and hens. We have obtained no evidence that the young chick and the hen differ in any way in their ability to use dehydrated alfalfa meal. Furthermore, the level at which the alfalfa meal is fed has little if any influence on its apparent utilization. Independent experiments have shown that alfalfa saponins, which can exert marked growth retarding effects, influence energy utilization only when they are fed at relatively high levels.

The metabolizable energy values obtained for representative alfalfa meals, produced in different areas of the country and covering essentially the full range of normal composition variation, were found to be somewhat higher than would be expected from previous studies on energy utilization. In general, as protein level increased and crude fiber content decreased, the metabolizable energy value of the respective meals became higher. Average values for meals containing approximately 17% protein centered around 600 metabolizable energy Calories per pound; meals of high protein content had energy values approximately 700 Calories per pound.

These values were substantially higher than those expected from the commonly used productive energy values based on the extensive studies of Fraps at Texas A&M College. The Fraps values for productive energy in alfalfa range from 280 to 340 Calories per pound, or somewhat less than half of the metabolizable energy values obtained in these studies. Normally, productive energy values are about two thirds of metabolizable energy, so that the findings in the Cornell experiments indicate a better utilization of alfalfa meal than anticipated.

Work is continuing to extend the range of meals studied and to investigate also the energy values of fractions of alfalfa meals prepared by physical separations.

Group Sells Shares To Build Poultry Plant

CLINTONVILLE, WIS. — Greater Clintonville No. 2, an industrial development corporation here, has begun the sale of debentures to raise money for construction of a poultry processing plant for the Wright Broiler Co. in Clintonville.

Emil Kuehl, president of the development group, said that after the first four days of selling, some $20,000 in 20-year 5% debentures had been subscribed.

The debentures are issued in $100 denominations and will be called in 19 equal amounts starting two years after issue. The purchasers of the $100 securities will have a $90 debenture and a $10 share of stock in the corporation that will own the building, Mr. Kuehl pointed out.

"In this way, control of the company will be with the debenture owners," he said.

Interest will be paid on the entire amount and the stock will be called in at the same time as the debentures.

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The Value of Alfalfa for Beef Cattle and Sheep

- For Fattening Cattle Rations
- For Wintering Cattle Rations
- For Protein Supplement
- For Sheep Rations
- For the Future

By Dr. J. K. Matsushima
University of Nebraska

Dr. J. K. Matsushima

EDITOR'S NOTE: The accompanying article reviews the results of sheep and beef feeding trials at Nebraska and other experiment stations which show the high nutritional value of alfalfa as hay or as dehydrated alfalfa. Also mentioned are the estrogenic activity of alfalfa and the prospects of wider uses when further knowledge of its feeding value is gained through research. Dr. Matsushima is on the animal husbandry department staff at the University of Nebraska.

v v

Alfalfa is "King" among roughages in most cattle and sheep feeding areas. Aside from its high yields and various merits from the agronomic standpoint, alfalfa has superior nutritional qualities. Its protein content, minerals (particularly calcium), vitamins and unknown factors along with its high palatability make it an extremely valuable feed. Because of its high nutritional value, alfalfa (as hay or as dehydrated alfalfa) has shown up favorably in many of the feeding tests conducted at Nebraska and other experiment stations.

For Fattening Cattle Rations: Alfalfa hay and corn make a good combination in providing the greatest portion of the ingredients frequently used in corn belt cattle and sheep rations. When alfalfa hay makes up 25 to 35% of the total weight of the feeds (dry basis) in a cattle fattening ration, the hay generally provides a sufficient amount of protein.

Two questions frequently raised in connection with alfalfa hay are: (1) Is this protein from alfalfa utilized efficiently by the cattle? (2) How do cattle perform when they receive no additional protein where alfalfa hay is fed? To answer these questions, four similar tests were repeated in successive years (3) (4) (5) (10) at Nebraska.

The main objective of these tests was to determine the comparative values of alfalfa hay, bromegrass hay, and prairie hay as roughages in cattle-fattening rations. The experiment was designed so that soybean oil meal, urea, and alfalfa hay could be compared as nitrogenous supplements in the fattening rations. There were six lots of 10 animals each in each year's test. Two of these lots were fed soybean oil as the protein supplement and two other lots were fed urea. Two lots of animals received their source of protein from alfalfa hay. The results from these tests, as shown in Table 1, indicate that the protein from alfalfa hay was just as effective or perhaps more so than soybean oil meal or urea when animal gains and feed efficiency values were compared. There were no appreciable differences in carcass grades or quality of carcass due to the sources of protein in the rations.

For Wintering Cattle Rations: Alfalfa hay can be fed as the only roughage for wintering beef cattle. However, such a ration generally will not provide enough energy for calves to produce the desired gains even though the ration may furnish ample protein. A group of calves on a wintering test at the Nebraska station (1) during a 133-day period gained an average of 0.70 lb. daily on 12 lb. of alfalfa hay. The average daily protein and energy (Total Digestible Nutrients) intake was 1.80 and 6.1 lb., respectively. Another group of calves was fed 34.5 lb. of silage and 2.4 lb. of alfalfa hay daily. The average daily protein and energy intake was .74 and 7.4 lb., respectively. These calves gained 1.26 lb. daily.

It is recognized, of course, that the quality of alfalfa hay and other factors such as environmental conditions may affect the gains. A wintering test at the South Dakota Experiment Station (6) resulted in a daily gain of 1.03 lb. on 14.2 lb. of alfalfa hay. In another feeding test at Nebraska (2), a group of calves fed 15.5 lb. alfalfa hay gained 1.40 lb. daily.

Dehydrated Alfalfa for Protein Supplement: Dehydrated alfalfa, as meal or pellets, has increased beef cattle gains in both wintering and fattening rations in nearly every feeding test conducted at the Nebraska station. Various protein supplements were fed individually or in combinations with dehydrated alfalfa. In most of these experimental rations the supplemental nitrogen had been adjusted to be nearly alike. Hence, any difference in the performance of animals would probably rule out the effects of level of supplementary nitrogen or protein.

In 1956, the results from a fattening test (8) indicated the possible presence of some unknown factor or estrogenic material in dehydrated alfalfa. Since that time, two additional feeding trials have been completed at Nebraska (9) (11) and it appears probable that the estrogen content in dehydrated alfalfa is responsible for the greater animal gains and increased feed efficiency. (It should be pointed out that the estrogen content in dehydrated alfalfa will vary in different cuttings, stage of maturity when the alfalfa is cut, the area and climatic conditions which prevail during the growth of the alfalfa and, perhaps, other factors.)

The results, as shown in Table 2, from the second feeding trial (11) which was recently completed would

TABLE 1. The Value of Nitrogen Source in Cattle Fattening Rations*
(Average of Four Trials)

Source of Nitrogen—	Soybean Oil Meal	Urea	Alfalfa Hay
Number of Animals	56	56	56
Avg. No. Days Fed/Trial	143	143	143
Avg. Initial Weight, lb.	817	817	819
Avg. Daily Gain, lb.	2.14	1.97	2.17
Avg. Daily Feed, lb.			
Grain	16.0	16.4	16.3
Soybean oil meal	1.38	...	...
Urea, 262% protein equivalence	...	0.20	...
Hay	5.20	5.10	5.26
Feed Required/cwt. Gain, lb.			
Grain	772	857	773
Soybean oil meal	55	...	...
Urea	...	10.9	...
Hay	253	267	247

*The amounts of soybean oil meal and urea that were added to the respective rations were adjusted according to the amount of protein equivalence furnished by the amount of alfalfa hay fed.

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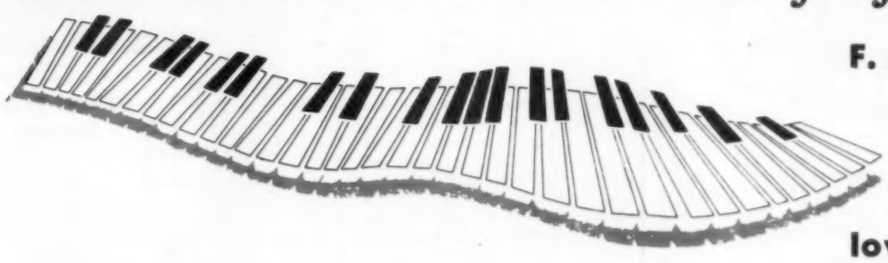

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Columbus, Nebraska

CONVENTION SITE—Center of activities for the American Dehydrators Assn. convention this year will be the Shamrock-Hilton Hotel in Houston, pictured here. Besides an educational program covering the future of dehydrated alfalfa in formula feeds, the convention will also feature tours and entertainment. Registration begins Jan. 28. Early arrivals can take a boat trip on the Houston Ship Channel to the San Jacinto Monument. Activities are also planned for ladies attending, and special functions for children will be planned if enough of them attend.

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TABLE 2. Average Daily Gains of Steers Included in Trial II During a 184-day Feeding Period

Supplements, per head daily	No Stilbestrol	Stilbestrol	Average
.9 lb. soybean oil meal	2.28	2.43	2.36
2.5 lb. dehydrated alfalfa	2.35	2.66	2.51
4.9 lb. dehydrated alfalfa	2.68	2.63	2.66
1.25 lb. dehy. + .5 lb. S.O.M.	2.22	2.59	2.41
Average	2.38	2.58	....

tend to indicate that 2½ lb. of dehydrated alfalfa pellets provided nearly the same estrogenic effect as 10 mg. of stilbestrol. This deduction could be drawn if the daily gain of 2.35 lb. for the group which was fed 2.5 lb. of dehydrated alfalfa daily as the protein supplement and without stilbestrol were compared with the daily gain of 2.43 lb. The latter gain is for the group of steers fed .9 lb. of soybean oil meal with 10 mg. of stilbestrol.

It could be erroneous or misleading, however, to assume that 2.5 lb. of dehydrated alfalfa will always give the same estrogenic activity as 10 mg. of stilbestrol. For example, in this experiment, when 10 mg. of stilbestrol was fed with 2.5 lb. of dehydrated alfalfa, there was approximately 13% more gain than when the same amount of dehydrated alfalfa was fed without stilbestrol. The group fed 2.5 lb. dehydrated alfalfa without stilbestrol gained 2.35 lb. daily while another group that was also fed 2.5 lb. of dehydrated alfalfa but supplemented with 10 mg. stilbestrol gained 2.66 lb. daily. This indicates that dehydrated alfalfa may contain a hormone or similar substance which augments the utilization of stilbestrol. Or it may suggest the presence of some unknown factor in dehydrated alfalfa.

Dehydrated Alfalfa and Alfalfa Hay for Sheep Rations: Alfalfa has been proved to be an excellent feed for sheep. Most of the sheep experiments at Nebraska dealing with alfalfa have been with fattening rations. Various kinds of silages (corn, alfalfa, sugar beet tops and grain sorghum) were fed with and without alfalfa hay for the roughage portion of the ration. In nearly every case, the addition of about .75 lb. of alfalfa hay to the silage and grain rations increased the gains, improved the appearance of lambs, reduced scouring and helped to maintain a uniform appetite.

In certain areas and in certain years the spread in cost of baled alfalfa hay and dehydrated alfalfa pellets is not very great. A lamb feeder, then, has a choice of the roughage to be used. A recent feeding test at Nebraska (7) compared the feeding value of chopped alfalfa hay and dehydrated alfalfa pellets. The chopped hay and the pellets were not comparable from the standpoint of chemical composition. Therefore, the magnitude of differences in gain and feed efficiency may be greater than if the two had been harvested at the same stage of maturity and handled more nearly alike except for the chopping and pelleting. The results, however, showed a 39% increase in gain and 45% increase in feed efficiency by feeding the dehydrated alfalfa pellets. Both groups were fed about the same amount of grain and roughage in the daily ration.

Greater Future for Alfalfa as Livestock Feed: Although a considerable amount of knowledge has already been obtained about the feeding value of alfalfa there will be more information added as time goes by. Efficient handling, processing, and storage with the development of new machinery should help in keeping the quality of the alfalfa at its maximum. Furthermore, the unknown factor(s) in alfalfa will be eventually identified. The mode of action of these unidentified or unknown factors will then be determined and then a proper combination of these substances with some of the chemical materials already on hand may make alfalfa a more important feed than it is today.

v v

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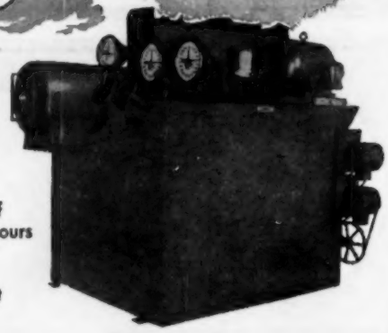

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OLD DEHY

(Continued from page 1a)

chase high quality alfalfa during the producing months to safeguard himself for supplies of high vitamin A activity during the winter. The dehydrator has taken care of that by hundreds of thousands of tons of protective storage, thereby assuring a year-round supply of quality material.

The Switch From Hay to Dehy: When dehydrated alfalfa first entered the market in the early 1930's it was merely a substitute for ground hay. As late as 1944 the volume of the new product produced and sold in the U.S. amounted to only about half the volume of suncured hay meal. By 1944, however, some results of the considerable study of the newer product began to show its superiority and by 1946, a dozen years ago, the production of the dehydrated product first exceeded that of the field-cured. (See Figure 1.) In that year, a little over 600,000 tons were produced. Since then the production of dehydrated alfalfa has steadily increased and production of the naturally-dried product has fallen, finally reaching its lowest level in the 1957-58 year at 176,200 tons, of which about 55% was California production. About 86% of all alfalfa meal produced in the 1957-58 year was the dehydrated variety.

Research Showed the Way: Why has the dehydrated alfalfa product climbed in production and use from a quarter of a million tons to over a million tons in the short space of 15 years? Largely, we believe, because of research. Research by the feed manufacturing companies, research by some of the dehydrating firms, by independent workers, state experiment stations, U.S. Department of Agriculture, etc. Much of this research was sparked by the dehydrating industry's own foresightedness in developing a research program through its association.

There is another phase to this program of increased usage, in the product improvement which has been going on for a number of years. It has been intensified in the past five years by members of the dehydrating fraternity themselves. This phase encompasses the efforts of individual firms to meet the demands of the users of the product for greater uniformity, higher quality, more usable forms and product protection.

The formula feed manufacturers wanted to use dehydrated alfalfa in their mixed feeds but the nuisance of dustiness, the lack of uniformity in carloads and between carloads, the bridging characteristics of the dry, dusty meal in bins, hoppers and feeders, the instability of the carotene, xanthophyll and other factors subject to rapid oxidation all militated against it.

Preservation: The greatest forward step taken by the dehydrators has been their rapid adoption of protective storage. Earliest efforts to save the carotene (provitamin A) were by treatment with fats or oils, use of antioxidants known then to be safe, coarser grinding to expose less surface and storage under refrigeration. Of all of these efforts, only refrigeration gained any wide acceptance. Since the loss of carotene was a function of time and temperature, the lower the temperature the greater the protection. But refrigeration at temperatures below the freezing point becomes rapidly more expensive both to build and to operate.

An estimate of such storage in use in the late 1940's—at its peak—would be 35,000 tons, ranging from 32° F. down to zero. Trouble was experienced with meal coming out of such storage. Condensation of moisture from the air presented a problem and there also appeared to be a shock loss of carotene in the warming-up period at a rate greater than normal.

At about the time when cold storage had reached its peak, Cerophyl Laboratories, Inc., put in the first 100 tons of storage under non-oxidizing gas in bolted steel tanks. Results obtained with that initial installation warranted the expansion to a capacity of nearly 8,000 tons of dehydrated alfalfa and grasses in the form of meal in bolted steel tanks.

Dr. C. Ray Thompson of the Western Regional Research Laboratory, USDA, at the Fifth Technical Alfalfa Conference presented the data in Table 1 to show preservation when oxygen is excluded or very low in the environment.

From 1953 to 1958, a matter of five years, the use of this method of storage practically quadrupled. (See Table 2.) It is impossible to talk of the installation of gas storage without at the same time talking of pelleting. The early installation by Cerophyl was built for meal storage. That original installation has now been completely converted to storing of pellets. No doubt the pelleting of the product would have come about anyhow in time, but gas storage provided the great impetus for rapid conversion to pellets. Storage capacity is doubled through pelleting; bridging of the product is entirely eliminated; mechanical handling is made easy.

The system of pelleting and storing under inert gas made possible an uninterrupted flow of the raw green alfalfa or grass through the

(Turn to OLD DEHY, page 32a)

TABLE 1. Carotene Retention in Atmospheres of Various Oxygen Content

	Time, Days			
% Oxygen	28 %	58 %	85 %	112 %
0.3 ...	98	97	96	..
3.0 ...	91	93	91	90
5.3 ...	94	92	90	87
Air ...	76	67	65	61

TABLE 2. Inert Gas Storage of Dehydrated Alfalfa in U.S.*
(In tons)

	1954	1955	1956	1957	1958
Kansas	44,500	67,500	76,750	97,500	82,300
Colorado	1,610	2,800	10,750	16,500	22,500
Nebraska	72,400	85,320	97,000	106,000	170,000
Ohio	2,400	7,400	8,000	13,300	36,000
Iowa	....	5,000	5,000	5,000	8,700
Indiana	....	1,200	2,500	2,600	3,200
Minnesota	....	....	3,000	3,500	4,200
Missouri	....	....	2,000	3,000	8,500
Oklahoma	....	....	600	3,600	3,600
California	....	....	....	6,000	6,700
Illinois	....	....	....	400	2,800
Pennsylvania	....	....	....	3,900	3,900
Tennessee	....	....	....	....	18,000
Georgia	....	....	....	....	12,000
	120,910	169,200	205,600	261,300	382,400

*Figures presented by Dr. C. Ray Thompson, Western Regional Research Laboratory, Albany, Cal., at Fifth Technical Alfalfa Conference, Colorado State University, Aug. 15, 1958.

Warren J. McCoy

Assistant to Pillsbury President Appointed

MINNEAPOLIS — Warren J. McCoy has been appointed assistant to the president of the Pillsbury Co., according to Paul S. Gerot, president. Mr. McCoy was formerly public relations manager for the staff divisions at Pillsbury. He joined the company in 1939 and served in the sales department in Minneapolis and Chicago. In 1952 he became a member of the firm's public relations staff. Mr. McCoy was born in New Richmond, Wis., and was graduated from Beloit (Wis.) College.

NEW DAY

(Continued from page 1a)

Farm, Modesto, Cal., will discuss dehy in poultry rations; Dr. H. O. Kunkel, Texas A&M College, ruminants; Dr. C. F. Huffman, Michigan State University, dairy cows, and Dr. W. N. McMillen, A. E. Staley Manufacturing Co., Decatur, Ill., swine.

Another highlight of the convention will be a "Research Round Table" scheduled the evening of Jan. 29 with Dr. J. R. Couch, Texas A&M College, as moderator. Members of the ADA research council will present brief summaries of current work, and these men will then be joined for a question and answer period by those who spoke earlier in the day on nutrition topics.

Production and Marketing

The emphasis on production and marketing will be given on Jan. 30. A production workshop will be presented by Frank Allen, head of the Archer-Daniels-Midland Co. equipment division, Kansas City; Robert Fulton, head of the ADM alfalfa division, Kansas City, and Ralph Kneeland, assistant to the director, bureau of enforcement, Food & Drug Administration, Washington.

They will discuss pelleting developments, quality control programs, blending, storage and processing changes and plant management goals.

Another part of the marketing forum will be a talk by Dr. L. C. Cunningham, professor of farm management at Cornell University, Ithaca, N.Y., on the potential for dehydrated alfalfa in formula feed. Another talk scheduled for the day is "How to Get Better," by Joseph E. Burger, director of public relations for H. V. Nootbaar & Co., Pasadena, Cal.

"Plant Management and Costs" will be discussed by E. R. Burkholder, Consolidated Blenders, Inc., Fremont, Neb., and an open forum on marketing is also scheduled for the afternoon.

Robert S. Pharo, Keystone Dehydrators, Nazareth, Pa., president of ADA, will open the convention. His address will be followed by committee reports and the election of new directors. A dinner honoring the new ADA president will be given the evening of Jan. 29 with Bryan Blalock, the Borden Co., Marshall, Texas, as speaker.

Registration begins Jan. 28. For those who arrive early, a boat trip on the Houston Ship Channel has been planned. A "South of the Border" party also is planned for the evening of Jan. 28.

The annual dinner dance will be held the evening of Jan. 30 with Shep Fields Orchestra providing the music. Also available is a post-convention tour leaving the Houston airport at 8 a.m. Jan. 31 for three days in Mexico City.

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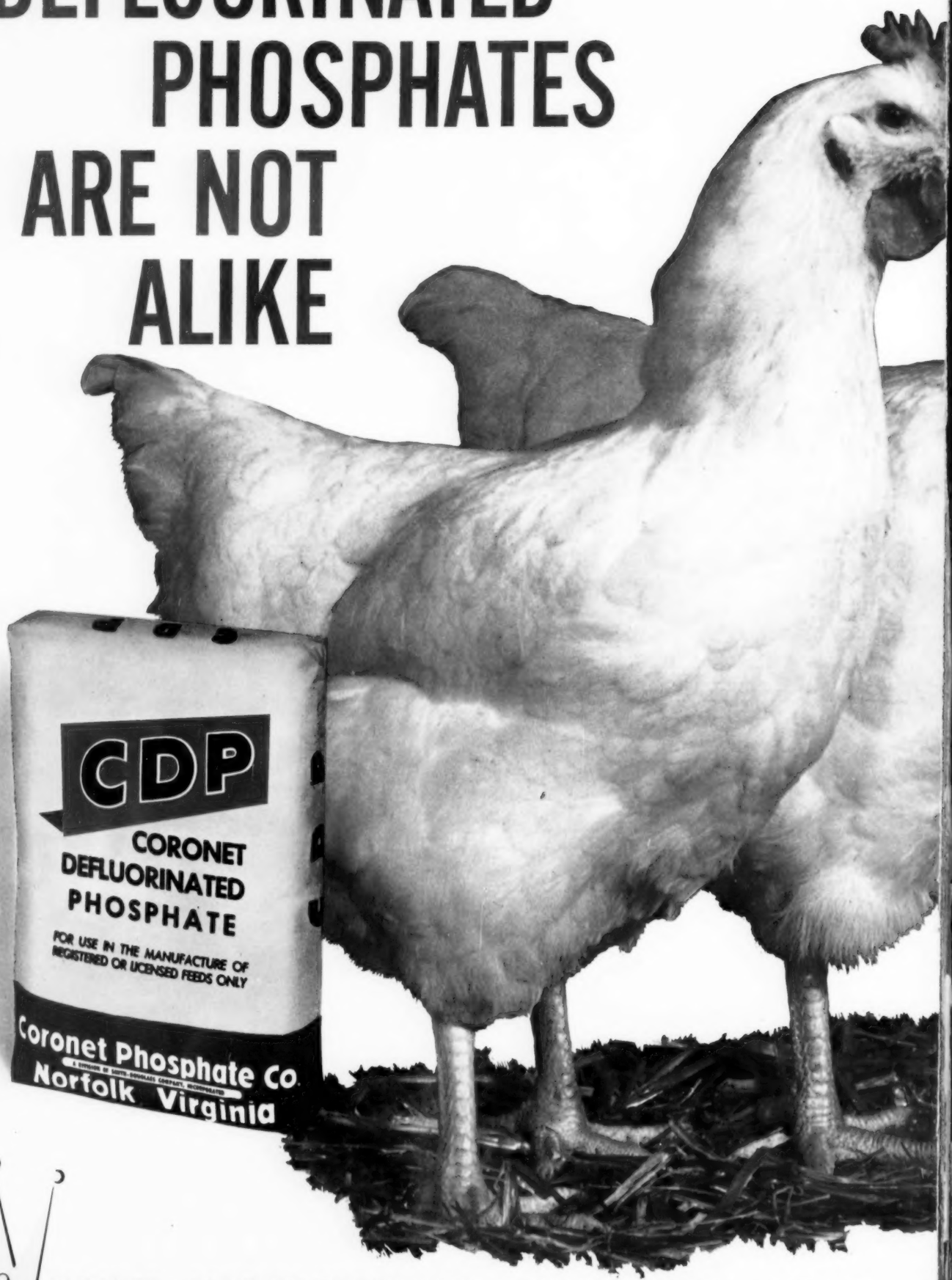

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1. "The Availability of Phosphorus from Different Sources for Poults Fed Purified Diets." Poultry Science, Volume XXXIII, Number 5, September, 1954.
2. "A Comparison of the Availability, to the Young Growing Chicken, of the Phosphorus in Defluorinated Phosphate and Analytical Reagent Grade Dicalcium Phosphate," by Lime Crest Research Laboratory, October, 1954.
3. "The Availability of Phosphorus from Different Sources for Poults Fed Practical-Type Diets." Poultry Science, Volume XXXIV, Number 5, September, 1955.
4. "Phosphorus Availabilities as Determined by New Feeding Experiment," by Lime Crest Research Laboratory, November, 1955.
5. "Phosphorus Availability Assays by the University of Illinois Method," (as presented by Dr. H. H. Scott) by the Laboratory of Vitamin Technology, Inc., September, 1956.

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NORTHWEST RETAIL FEED ASSN. OFFICERS—Wendell Lenton (left), manager, Farmers Elevator Co., Inc., Stewartville, Minn., and outgoing president of the Northwest Retail Feed Assn., congratulated new officers following their election at the recent convention of the group in Minneapolis. Others on the photo (from left to right) are: George Kolb, Belgrade (Minn.) Flour Mills Co., vice president; George Tobias, Pipestone (Minn.) Grain Co., new president, and W. D. Flemming, Minneapolis, reelected secretary-treasurer.

Says Memphis Will Become Leading Grain, Livestock Mart

MEMPHIS—Paul Mulroy, Quaker Oats Co., was unanimously elected president of the Memphis Board of Trade recently, succeeding D. J. Guillory, Guillory Sales Co. Mr. Mulroy also automatically became president of the Memphis Board of Trade Clearing Assn.

Elected vice president was H. D. Tobias, Goldenrod Oil Meal Sales Co., victor over J. S. Harpster, Standard Commission Co. Mr. Tobias will become the 1960 president.

Named directors were Lee D. Canterbury, Cargill, Inc.; H. Brent Cooke, Jr., Humphreys-Godwin Co.; Giles A. Coors, Jr., Fred Lovitt & Co.; Herbert Crook, Gulf, Mobile & Ohio Railroad; W. R. Flippin, Buckeye Cellulose Corp.; James W. Phelan, Mitchell, Hutchins & Co.; H. O. Toler, H. O. Toler, broker, and Mr. Guillory.

Arthur A. Williams, who was reelected executive vice president of the Board of Trade, reported that 1958 was one of the best years in its history, and he also predicted a bright future for Memphis.

"Memphis is destined to become one of the large grain and livestock markets of our country," he said, "with nine railroads serving the city, and with the Mississippi River at the city's door. We are in the center of an area which has alluvial soil, abundant water and ideal climate, the three requisites for producing grain and livestock. Besides, our agricultural economy has already begun to change."

Mr. Williams reported a sound financial condition for the three exchange corporations, and said that fixed assets had gained tremendously in the past 10 years.

He pointed out one disappointing fact—protein oil meal futures trading volume was 31% below 1957. "However," said Mr. Williams, "certain steps have been taken to reduce operative costs to offset the decline in trading."

Mr. Williams said a definite need exists for a futures market. He said Memphis, because of its geographic location, should soon become a price basing market for soybean oil meal produced south of the Ohio River.

He told the several hundred persons in attendance that Memphis is the logical place for the accumulation, distribution and processing of soybeans.

In 1958, he said, the inspection department of the Board of Trade, under the supervision of Fred B. Simpson, inspected more than 60 million bushels of grain and soybean receipts, an increase of 20% over 1957. A record of the inspected grain and soybean shipments from Memphis was kept by the department and totaled more than 20 million bushels.

"The total of inspected receipts and shipments of grain and soybeans for 1958," he said, "therefore was more than 80 million bushels. And it should be pointed out that this does not represent all the grain and soybeans received in Memphis in 1958, because a very large tonnage was received by truck, and this was not officially inspected."

PUBLISH BULLETIN ON BY-PRODUCT FEEDS

WASHINGTON—The U.S. Department of Agriculture has published a new technical bulletin on "The Demand and Price Structure for By-Product Feeds." It was written by Gordon A. King, statistician in USDA's Agricultural Marketing Service. The bulletin describes the principal economic variables that affect the demand for high-protein and other by-product feeds. It is the fourth study in a series designed to describe the economic relationships that exist within the feed-livestock economy and the supply-demand forces that affect the different concentrates. Demand interrelationships among the individual protein feeds and between the high-protein feeds and the feed grains are analyzed. In addition, the bulletin has data relation to production and use of these feeds. The bulletin—USDA Technical Bulletin No. 1183, The Demand Price Structure for By-Product Feeds—is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. The price is 50¢.

143 ax handles, 17-10c tomato cans, and 1 tobacco box

This odd assortment of material made up the first "official" horn-tip to horn-tip measurement of Paul Bunyan's famous blue ox, Babe. Unfortunately, Babe's later growth could never be recorded because he "growed" two feet more each time you looked at him. No doubt about it . . . Paul Bunyan knew his onions when it came to productive livestock feeding.

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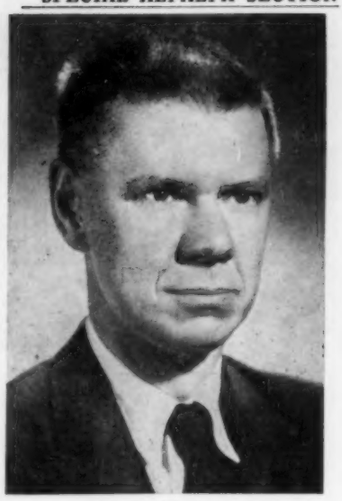
By Dr. H. R. Bird
University of Wisconsin



Dr. H. R. Bird

EDITOR'S NOTE: Among nutritionists, the viewpoint on the value of alfalfa meal in chicken rations has changed over the years, Dr. Bird points out in the accompanying article. But "one advantage of alfalfa meal that has not changed is the economy advantage, and it appears that it will not change in the foreseeable future," he states. Besides the unknown factors in alfalfa which are valuable in the chicken ration, "the known factors in alfalfa meal are still there and still worth money."

The question in the title of this article probably would be answered by most feed formulators in the following manner: "Because alfalfa meal contains an unknown factor necessary for optimal growth and reproduction." The answer implies that this factor is not supplied by other ingredients and that alfalfa meal must be used regardless of cost. One might also answer: "Because alfalfa meal contains a number of required nutrients, including an unknown factor, and it is the most economical combination of these nutrients that can be found." The author discussed the economic virtues of alfalfa meal in an earlier article. (Feedstuffs 27 [39]: p. 34, 1955)

SPECIAL ALFALFA REPORT

In a recent report on the development of a least-cost broiler formula by linear programming, Hutton and others (Production Research Report No. 20, A.R.S., A.M.S., USDA) took note of the value of alfalfa meal as a source of an unknown growth factor by specifying a minimum level of 2% regardless of cost. Their final formula contained the minimum level, 2%. This means that in their calculations other available ingredients were more economical than alfalfa meal as sources of required nutrients. However, their calculations were based on a price of $80.80 per ton for alfalfa meal which certainly does not reflect recent price trends.

In religion, in economics, and in law, it is considered to be instructive to review the doctrines, the theories, and the court decisions of the past. This exercise is less frequent in the natural sciences and especially in nutritional science. The probable reason for this situation is that today's viewpoint seems so far superior to yesterday's that there is no comparison. Let yesterday's ideas rest undisturbed on the shelf with the rest of the fossils!

Review Valuable

But there is some risk involved in this determined forgetfulness. Maybe we'd have a better idea of where we are if we remembered where we've been.

Here is a chronology of answers to the question: "Why feed alfalfa meal to chickens?" This chronology carries no documentation and no guarantee of accuracy. It was put together late one night at Midway Airport and is based on the author's rather faulty memory.

1925—Formerly all chickens had access to pasture during part of the year. At the present advanced stage of development of the poultry industry, more and more chickens are being kept under intensive conditions with no pasture. You can only go so far in tampering with nature. Alfalfa meal is necessary to take the place of the green feed formerly supplied by pasture.

1930—We now know that neither pasture nor any other component of the diet is indispensable. Alfalfa meal should be fed to chickens because it is a good source of vitamin A and one or more unknown dietary factors.

1938—Chickens require a number of different vitamins, several of which are supplied by alfalfa meal. Among these are vitamins A, E, and K, riboflavin, and pantothenic acid. Fortunately vitamins E and K are so abundant in poultry feeds that there is no possibility of deficiency in commercial flocks. Alfalfa meal is primarily a source of vitamin A.

1940—Alfalfa meal should be fed to chickens not only because it is an economical source of vitamin A, but also because it helps to prevent encephalomalacia, a manifestation of vitamin E deficiency in commercial flocks.

1948—"Crude fiber levels in broiler diets must be reduced to the lowest possible level! Take the alfalfa meal out!" "Chicks grow best with some fiber in the diet. The digestive tract is adapted to a diet containing some fiber. You can go only so far in tampering with nature!" "If chicks don't do well on very low fiber diets, it's because vitamin levels aren't adequate. Fiber is not necessary!" "'Tis!" "'Taint!" "'Tis!" "'Taint!"

1952—Alfalfa meal should be included in poultry diets as a source of vitamin K. Many of the outbreaks of hemorrhagic disease in commercial flocks are manifestations of vitamin K deficiency.

1954—Besides being an economical source of vitamins A, E, and K, riboflavin, and yellow pigment, alfalfa meal contains an unknown factor essential for optimal growth and reproduction.

1959—Same as 1954. What? No change in five years?

1969—With the isolation and synthesis of vitamin alpha alpha (formerly designated "the unknown forage factor") it is now possible to supply all the vitamins of alfalfa economically in synthetic form. But you still have to use some alfalfa in poultry feeds. You can go only so far in tampering with——. Oh, no! Not that again!

1970—Alfalfa meal should be used in poultry feeds because although all its vitamins including vitamin alpha alpha, can be furnished economically in synthetic form, alfalfa meal continues to be one of the most economical ingredients available to the feed industry if it is credited with the value of its protein, minerals, vitamins and pigment.

This chronology is just a sampling of viewpoints. It doesn't give an adequate picture of differences of opinion that were often prevalent. There are many adjectives that can be applied to nutritionists, but "unanimous" is not one of them.

The chronology emphasizes the

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ways in which viewpoints have changed with respect to alfalfa meal. One advantage of alfalfa meal that has not changed is the economy advantage, and it appears that it will not change in the foreseeable future. Right now one has to depend on dehydrated green feed for the "forage factor." Eventually it will be available from other sources—at a price. It will then be possible to evaluate it in dollars and cents, and we will have to credit alfalfa meal with the value of the "forage factor" it contains. Alfalfa meal should then be an even better bargain than it is now.

Past changes should make us ask how much room there may still be for changes in our viewpoints. We don't know all there is to know about feeding chickens, but what fraction of the total do we know? Before answering this question one should consider how much of our present knowledge is based on experiments with chicks from hatching to six weeks of age. We know very little about requirements for later growth, not much about needs of mature birds, and almost nothing about life-time effects or second generation effects.

In past studies of the nutritive requirement of the laying hen, we have been concerned with the nutrients needed to produce an egg or a viable chick. Recently it has been found that more attention has to be given to formulating diets that will maintain hens in production for a longer time. This is especially important for breeder hens of broiler strains. They appear to perform best on diets of moderate or low energy content, well-fortified with protein, minerals and vitamins. Alfalfa meal would appear to offer great promise as an ingredient of such diets, possibly at levels two to three times those ordinarily used in poultry feeds. This potential use deserves early investigation.

Hatchability

With respect to long-time effects, Touchburn and others (Poultry Science 36:591, 1957) reported a very interesting series of experiments in which New Hampshire chickens were fed with or without dehydrated green feed through three generations. Hatchability was remarkably good without any green feed in the diet, but it was significantly better in the second and third years when dehydrated green feed was added. In the third year the percentage of fertile eggs hatched was 86.6 with no green feed in the diet, 90.8 with 2.5% of dehydrated cereal grass, 89.1 with 2.5% of dehydrated alfalfa, 88.3 with 5% of dehydrated cereal grass and 88.8 with 5% of dehydrated alfalfa. The birds were kept on litter and fed starter, grower, and breeder diets made up of grains and commercial protein, vitamin and mineral supplements. The diets were designed to supply adequate levels of all known nutrients. This work confirms previous reports of the existence of an unknown factor in alfalfa meal which is essential for maximum hatchability and it shows that the effect of the factor can be demonstrated in birds kept on litter.

Waibel (Poultry Science 37:1144, 1958) recently confirmed the finding that the turkey poult requires an unknown factor from forage juice for maximum growth. The factor was especially important for late-hatched poults, which, at three weeks of age, weighed 11 to 15% more with the factor than without.

And the known factors in alfalfa

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CONVENTION PLANNERS—The program for this year's American Dehydrators Assn. convention was hammered into its final form by executives and committee members at a meeting held recently in Kansas City. At work on the program in this photo (left to right) are: Kenneth Morrison, Morrison & Quirk, Hastings, Neb.; Ralph Beermann, Beermann Bros. Dehy, Dakota City, Neb., ADA first vice president; Henry Moeller, Sioux Alfalfa Meal Co., Vermillion, S.D.; Joseph Chrisman, ADA executive vice president; Miss Eunice Hunt, ADA secretary; R. G. Brierley, Archer-Daniels-Midland Co., Minneapolis, second vice president; L. J. Schiller, Hayward, Inc., Oak Harbor, Ohio; Vernon C. Britton, V. C. Britton Co., Firebaugh, Cal.

meal are still there and still worth money. Thornton and Moreng (Poultry Science 37:1154, 1958) found twice as much vitamin K activity in dehydrated as in suncured meal, and they found that the vitamin K in dehydrated meal was relatively stable during storage at 25° C. for as long as 24 weeks. Kohler (Report, 5th Technical Alfalfa Conference, Ft. Collins, Colo., Aug. 15, 1958) recently reviewed the information on vitamin E content of alfalfa meal and found the reported figures ranging from about 100 to about 150 International Units per pound. Ferguson calculated that 5% of alfalfa meal added $10.08 worth of xanthophyll to 100 lb. of one diet at a cost of 94¢ (Feeds Illustrated, September, 1958).

If alfalfa meal supplied only one useful nutrient, it would be easier to answer the question in the title. Because it supplies several, there are several good reasons for using it and they all add up to more economical conversion of feed dollars to product dollars.

Mississippi Egg Firms Merge

JACKSON, MISS. — Two major businesses in commercial egg production operations, Mississippi Federated Cooperatives (MFC) and Better Eggs, Inc., have merged their operations into the poultry department of MFC.

The announcement was made by E. G. Spivey, general manager of the cooperative, and L. E. Burnett and Horace Steele, president and chairman of the board, respectively, of Better Eggs.

Included are the hatchery, breeding farm and milling facilities of Mr. Burnett, who will continue in active participation in the new enterprise. Mr. Steele will serve in an advisory capacity.

Operations and personnel of Better Eggs will continue without change for an indefinite period, officials said.

The joint announcement said:

"The commercial egg enterprise in Mississippi, which has for generations lagged behind other regions, took a step forward when the production and marketing operations of Better Eggs, Inc., and the poultry operations of L. E. Burnett were incorporated with the statewide commercial egg program of Misssissippi Federated Cooperatives, which has been in the development stage for several months.

"We are convinced that the improvement in efficiency which can be gained through a large volume of production and marketing and through integration of the production and marketing facilities will operate to the benefit of the entire state. The consumers of eggs will be assured of a year-around supply of locally produced high quality eggs instead of being subject to conditions which prevail in an area where not enough eggs are produced to meet local needs.

"Farm producers should gain from the efficiencies resulting from the increase in volume. The economy of the state will be improved by the added business activity. Existing contractual obligations of Better Eggs, Inc., and Burnett enterprises will not be affected by the merger."

St. Joseph Exchange Directors Named

ST. JOSEPH, MO.—Five directors have been elected by the members of the St. Joseph Grain Exchange. K. B. Clark, Ken Clark Grain Co.; Arthur E. Frank, Dannen Mills, Inc.; Robert G. Graham, Graham Grain Co., and Christopher Harris, Stratton-Theis Grain Co., were elected for two-year terms. J. D. McKee was elected for a one-year term. Officers of the exchange are scheduled to be elected Jan. 13 and installed at the annual dinner and business meeting at the Hotel Robidoux.

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- ☐ over-fortifying with phosphates of low availability
- ☐ adding unnecessary margins of safety
- ☐ with too wide a calcium-phosphorus ratio
- ☐ assuming that all chemically processed phosphates are alike
- ☐ assuming that phosphates of inferior quality are satisfactory under "practical" conditions

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Dehydrated or Suncured Alfalfa in Ruminant Rations—There Is a Difference

"With few exceptions, purchasers of ruminant formula supplements or rations should insist on 'dehy' being incorporated in the formula."

By Dr. William H. Burkitt
Director of Nutrition, Montana Flour Mills Co.

EDITOR'S NOTE: Dr. Burkitt points out in the accompanying article that dehydrated alfalfa meal is different from and superior to suncured alfalfa meal. He indicates that many feeders are not well enough acquainted with this difference and states that more work can be done on telling the "dehy" story. He also reviews the place of dehydrated alfalfa in ruminant rations and compares its values with suncured meal.

"Alfalfa meal," "suncured alfalfa meal," and "dehydrated alfalfa meal" are terms which may appear in the ingredients list on feed tags when alfalfa is used in the formula. The names may be similar but "value received" and "results when fed" can be widely different.

The terms "alfalfa meal" and "suncured alfalfa meal" appearing in the ingredients list on formula feed tags indicate the same thing—baled or stacked suncured alfalfa hay has been ground and put into the formula. When suncured alfalfa meal is used in formula feeds, actually "suncured" should precede "alfalfa meal" as "suncured alfalfa meal." However, the word "suncured" is often left out in practice. When just "alfalfa meal" appears on the tag, it can be assumed that it is only ground suncured alfalfa hay.

When the word "dehydrated" precedes "alfalfa meal," it is an entirely different product from suncured alfalfa hay. When properly used, dehydrated alfalfa is not hay, according to the 1959 definition of the Association of American Feed Control Officials. The term dehydrated may precede the name of any alfalfa product, provided that the freshly-cut alfalfa having a moisture content of not less than 50% has been artificially dried at a temperature of at least 212° F.; that the drying process covers a period of not more than 40 minutes and that there is no admixture of suncured alfalfa.

The AAFCO also states that "alfalfa meal or pellets or granules . . . must be identified in the product name as (a) suncured, (b) dehydrated, or (c) mixed suncured and dehydrated."

Standards in industry for dehydrated alfalfa meal are considered to be a minimum of 17% crude protein, a maximum of not more than 27% crude fiber and a minimum of 100,000 units per pound of vitamin A from carotene. (This is equivalent to 60 mg. of carotene per pound.) In the production of dehydrated alfalfa meal, it is generally cut, chopped and dried within a period of one to two hours. It is usually cut at an earlier stage of maturity than is hay intended for suncured alfalfa.

By contrast, suncured alfalfa meal by definition: "Is the product obtained by grinding alfalfa hay which is reasonably free of other crop plants, weeds and mold. It must contain not more than 33% crude fiber." To the knowledge of the author, there are no minimum standards generally recognized in the industry for suncured alfalfa meal. Therefore, suncured alfalfa meal is an extremely variable product. Alfalfa hay that has been cut late and has leaves lost by shattering, that may have been rained on, that has lost much of its nutritional value, still qualifies as "alfalfa meal" when ground.

Results are Different

The American Dehydrators Assn., through its program of research grants to agricultural experiment stations, has proven beyond all doubt that dehydrated alfalfa contributes nutritional factors and performance to ruminant rations that cannot be obtained in suncured alfalfa meal. In many tests, adding dehydrated alfalfa to cattle and lamb-fattening rations and to dairy rations already containing suncured alfalfa hay has given boosts in performance. Responses may be even greater in wintering rations based on winter grazing or other low quality roughages. Dehydrated alfalfa contributes nutritional factors essential for optimum "paunch performance," feed utilization, and growth of ruminants. These factors are not found in adequate amounts in other commonly used ingredients in ruminant rations. To date, there is no substitute for "dehy".

There are three basic reasons that justify the use of small amounts of dehydrated alfalfa meal in ruminant supplements and/or rations when ruminants are not on high quality pasture:

1. Dehydrated alfalfa is the closest thing available to "green grass nutrition."
2. Dehydrated alfalfa adds nutrition and performance that cannot be obtained from suncured alfalfa hay.
3. Dehydrated alfalfa helps to overcome the wide variations that occur in roughage quality and protects against certain nutritional deficiencies that may occur on lower quality roughages, including alfalfa hay.

Resistance Not Justified

In most areas dehydrated alfalfa meal is now generally accepted as an important ingredient in ruminant supplements and rations. However, there are still some purchasers of ruminant formula feeds that object to dehydrated alfalfa meal in formulas. For example, in one area in particular it was necessary to remove dehydrated alfalfa meal from a dairy formula before it would be accepted and purchased by the dairymen. It appeared that the dairymen's resistance was due to lack of understanding of the nutritional contributions of dehydrated alfalfa. The nutritional quality of the dairy ration was actually lowered when the "dehy" was removed.

All too often the statement is heard: "Why should I pay $70 a ton for a supplement containing alfalfa when I already have hay at home?" This statement is often made without knowledge or consideration of distinction between "suncured alfalfa meal" and "dehydrated alfalfa meal." The statement is true if the supplement contains only suncured alfalfa meal. It is not true if the supplement contains no suncured alfalfa meal but contains dehydrated alfalfa meal. When the customer buys "dehy", he is purchasing nutrition that he does not already have at home.

It appears that the resistance that

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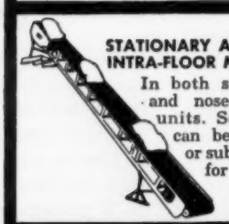

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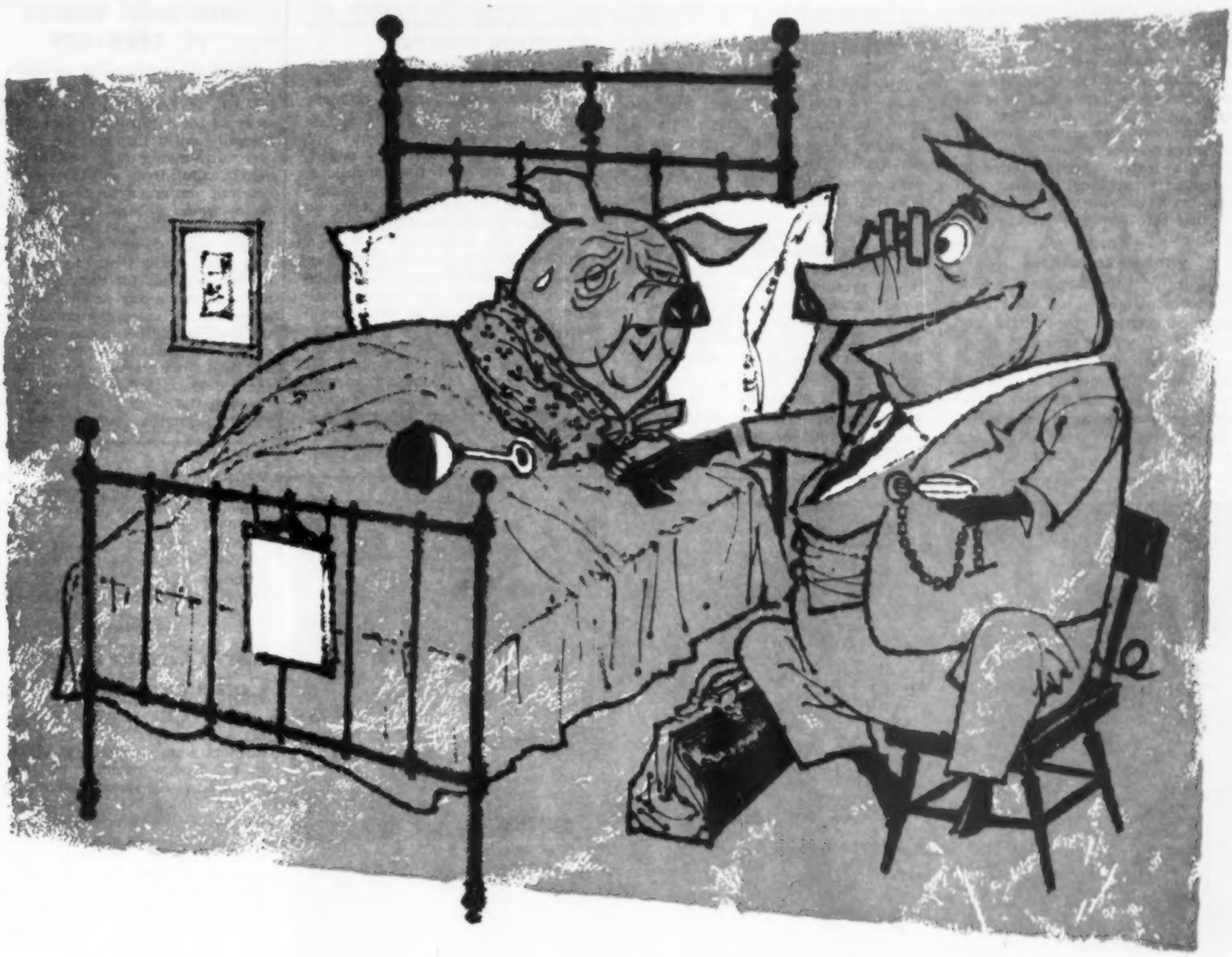

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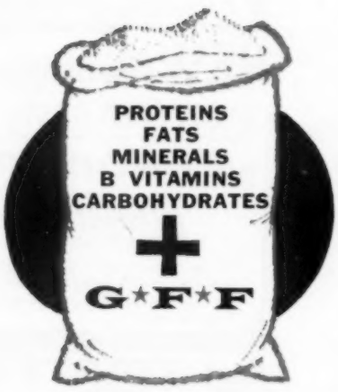

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is encountered on the part of customers buying ruminant supplements with dehydrated alfalfa meal results merely from a lack of sufficient and proper information getting to the purchasers. Livestock extension specialists and county agents can be quite helpful by making sure that the ranchers whom they serve understand the difference between "suncured" and "dehydrated" alfalfa. Formula feed industry personnel working with sales also have quite a responsibility in telling the full story on suncured and dehy.

"Dehy" Limitations

Dehydrated alfalfa pellets have been recommended and used as a winter supplement for cattle and sheep under winter grazing conditions. In the opinion of the author, dehydrated alfalfa pellets are not the ideal supplement by themselves for winter range programs. This is because of: (1) Low energy content, (2) medium level of protein, (3) extremely high calcium content, and (4) a medium to low phosphorus content.

Forages from most winter ranges are deficient in phosphorus and have a borderline or adequate level of calcium. To feed supplements such as dehydrated alfalfa pellets with high calcium and borderline phosphorus will only aggravate the phosphorus deficiency. Dehydrated alfalfa meal is a very valuable ingredient in formulas for winter supplement pellets but it needs to be in combination with additional energy, additional phosphorus, and in some cases additional protein. It should be recognized that after sufficient dehydrated alfalfa is fed to give the "dehy boost", any additional dehydrated alfalfa fed reverts to a "hay basis" as far as its value is concerned.

Summary

- Dehydrated alfalfa meal is different from and superior to suncured alfalfa meal.
- Dehydrated alfalfa meal in ruminant formulas adds nutrition and gives results that cannot be obtained with suncured alfalfa meal.
- Dehydrated alfalfa meal in ruminant formulas is not a "filler", "adulterant", or cheap, inferior ingredient.
- Dehydrated alfalfa meal in proper amounts has a place in all ruminant formulas except for livestock on excellent pasture. With few exceptions, purchasers of ruminant formula supplements or rations should insist on dehydrated alfalfa meal being incorporated in the formula.
- Purchasers of ruminant supplement or rations should recognize that when only "alfalfa meal" or "suncured alfalfa meal" appears in the ingredients on the tag, they are purchasing just "hay", as far as that ingredient is concerned. (There is a place for suncured alfalfa in combination with "dehy" in complete pelleted rations such as rabbit pellets, lamb fattener pellets, etc.)
- Dehydrated alfalfa pellets by themselves are not an ideal winter supplement for wintering programs of ruminants on winter grazing or low quality roughages.

(Note: The information given is, to the best knowledge of the author, accurate. It is intended to be helpful and is not to be considered a guarantee.)

FEED MEN 'RESCUE' ST. BERNARDS

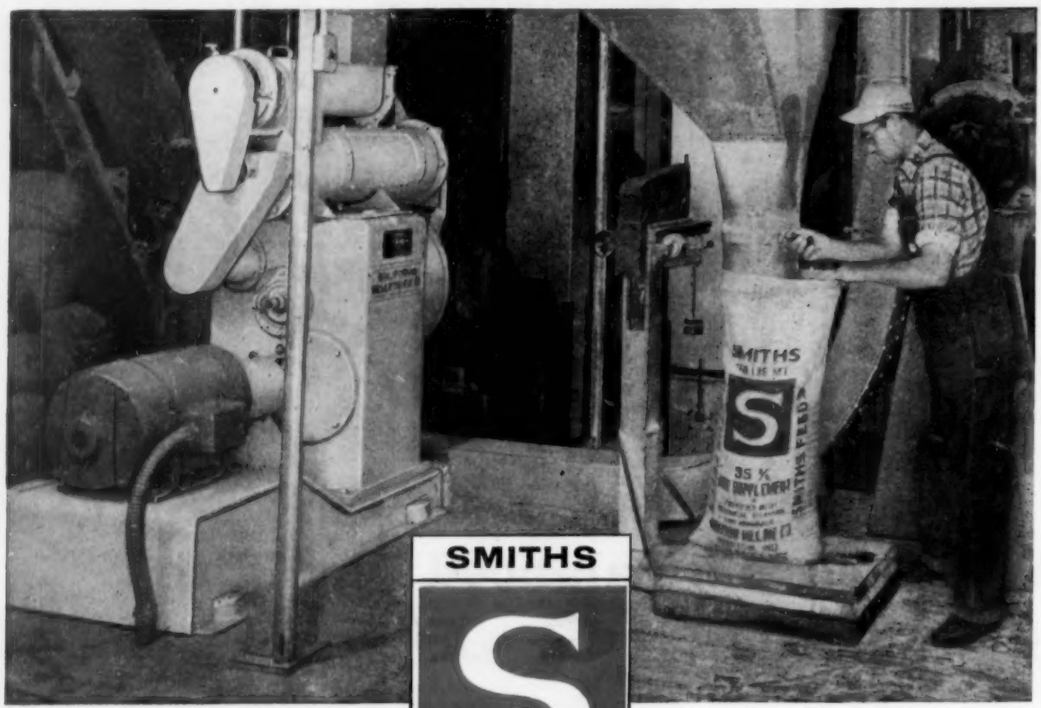
EUGENE, ORE.—The partners of Gray's Feed & Seed Store, Eugene, recently reversed the age-old rescue story of the faithful St. Bernard dog trudging miles through the snow to carry life-giving food and drink to man. Carlton Gray and Charles Laird received an emergency call at the store from a Mr. and Mrs. Bill Knight, who raise St. Bernards at a kennel some 20 miles off the highway from Drain, Ore. They had only enough dog food for their 30 St. Bernards to last a day or two, and indicated that if snow continued to pile up, there would be no way to get into or out of the kennels. Mr. Gray and Mr. Laird, with a ton of dog food on their delivery truck, drove 50 miles through the snow storm to "rescue" the St. Bernards.

Farm Group Discusses Collective Bargaining

FT. DODGE, IOWA—The advantages of collective bargaining for farmers were discussed at a meeting in Ft. Dodge recently by the National Farmers Organization (NFO).

Orin Staley, NFO president, Rae, Mo., told the group that grain and livestock farmers can be a self-help group like the fruit and vegetable growers if they also use collective bargaining in marketing their products. Some federal farm legislation will also be needed, but farmers can also help themselves through collective bargaining, he said.

He listed the following points as advantages of collective bargaining: (1) It will help stabilize prices, (2) raise incomes, (3) lower government costs, (4) reduce risk, (5) help get support of city residents because of lower tax costs for farm programs, (6) give farmers a voice in the commodity market for the first time, and (7) give farmers a program directed by farmers.



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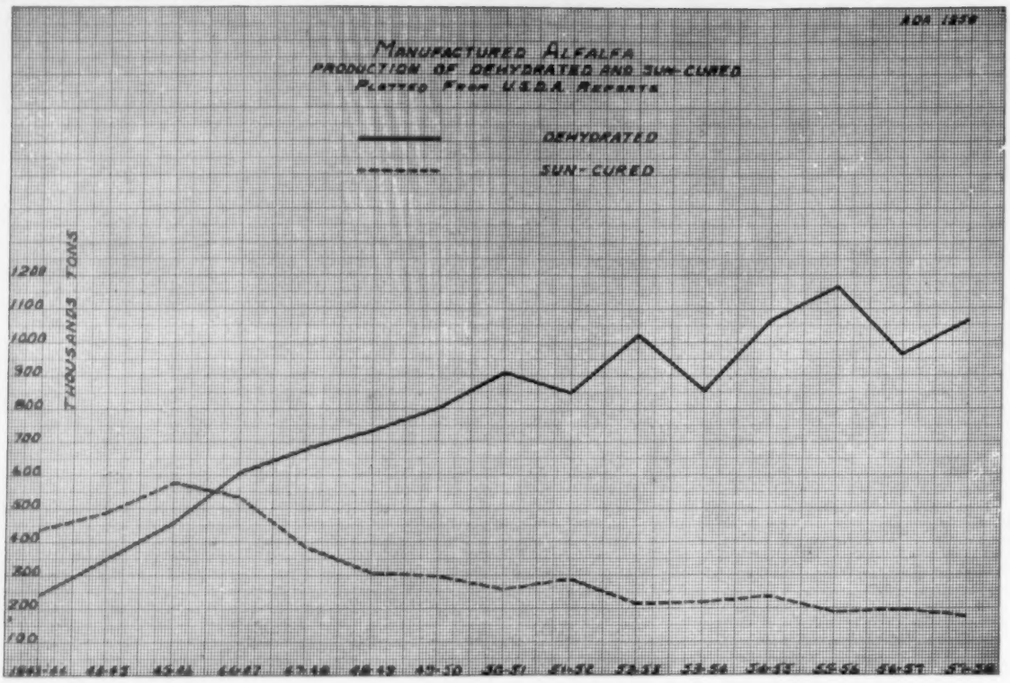

FIGURE 1

OLD DEHY

(Continued from page 18a)

dehydrator, through the hammermill into the pelleting machine and out through a cooling system directly to safe protective storage. Often the alfalfa standing uncut in the field finds itself dried, ground, compressed and away from any oxygen in a matter of 1 to 2 hours. Thus, the respiration and oxidation losses are reduced to an almost negligible amount.

In the old days (and that's not so long ago, either) the hot meal was put into burlap bags that sifted, might be of uneven weight and required lots of manhandling. These bags were stacked to the roof in a hot warehouse, acted as their own insulation and accelerated loss of carotene tremendously.

If they were not stacked in a warehouse, they probably went directly to a boxcar for a long railroad journey under a blazing summer sun. What chance did they have to cool down and save carotene?

If they were piled in a warehouse they had to be unpiled later, retested for carotene, and blended with fresher material, most likely, to be sure they would reach the customer at the specified grade. The overpack, so far as carotene was concerned, had to be from 20 to 25%. A conservative guess would be that 50 billion mg. of carotene formerly lost are now saved annually for the fowl or animal consuming alfalfa.

This has not been done without a considerable capital investment by the dehydrators, probably in the neighborhood of $10 million. This is partially offset by reduced handling costs and greater flexibility of operation. It has been accompanied by better control of product quality, new physical forms of dehydrated alfalfa as afforded by pellets and pellet breakdown products, and bulk handling with all of its savings in manpower.

The ultimate has not been reached in quality or preservation. Protection of dehydrated alfalfa in transit to the gas storage facility has been enhanced by the necessary cooling of the pellets, but loss of carotene still goes on at a reduced rate. Transit from the storage facility to the user is likewise without proper protection. Protection of the alfalfa in the mixed feed is also a desired end. These three phases will some day be remedied by use of a safe and efficient antioxidant applied at time of manufacture.

The dehydrating plant that doesn't pellet is rapidly becoming a thing of the past. The dehydrator who does not have protective storage available to him is becoming rare. More and more is it becoming evident that to stay in the game, one must be prepared to give the customer just what he wants, when he wants it, delivered in a manner suitable to him.

The customer is right! The dehydrating industry is still seeking improvements.

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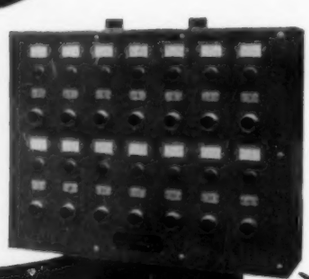

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Two new inmates of a theatrical home were getting acquainted.

"My name is James Darlington," said one. "You remember me in films? I was a star in silent days."

"Indeed I do remember you," said the other. "And I'm Jack O'Farrell, the magician of O'Farrell & Hughes. You may have seen our act where I used to saw Miss Hughes in half?"

"Of course, of course!" said Darlington, "and a very good act it was. By the way, where is Miss Hughes now?"

"Oh," said the magician, "she's living in Boston and Kansas City."

◆ ◆ ◆

A shrewd businessman was on a trip through the Southwest and was looking for souvenirs to take home to his friends.

He spotted an old Indian with a pile of blankets for sale and asked, "How much for the lot?"

"A hundred dollars," replied the old Indian.

"Twenty-four dollars," was the reply.

"Listen," said the Indian. "Bargains like Manhattan Island you ain't going to get no more."

◆ ◆ ◆

A frustrated motorist had been trying to pass a huge truck for many miles. Every time he tried to go around, the truck driver increased his speed or swerved slightly toward the middle of the road. Finally, at a stop sign, the motorist pulled alongside the truck driver's window.

"Well," growled the truck driver, glaring viciously.

"Nothing important," was the reply. "I know what you are—I want to see what one looks like."

◆ ◆ ◆

One advantage of being poor: It doesn't take much to improve your situation.

◆ ◆ ◆

There was a songwriter in Russia who composed a catchy tune titled Moon Over Moscow. The day after it was published, the secret police paid him a visit. The leader thrust a sheet of music at the composer. "Comrade," he demanded, "is this about our moon or theirs?"

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BLENDERS INC.

Dehydrated Alfalfa in Dairy Cattle Rations

By Dr. Frank Crane
Research Director, Land O'Lakes Creameries, Inc.

Dr. Frank M. Crane

In developing formula feeds for dairy cattle, beef cattle and sheep, the feed manufacturer must keep in mind that these classes of livestock do an outstanding job of converting rough feeds into nutritious food for our human population. This is especially true of the dairy cow. Thus, any formula feed developed must be so designed as to promote the most efficient use of roughages.

Young lush pastures will in themselves support high milk production. Unfortunately, when roughages are processed, weather conditions in almost all sections of the U.S. make it virtually impossible to produce a perfectly cured roughage. Badly weathered roughages usually show a marked loss in TDN. For example, in Morrison's (1) Feeds and Feeding Appendix Tables I. "Alfalfa hay, very leafy, contains 52.7% TDN while alfalfa hay, stemmy, contains only 46.3% TDN."

Thus, in order to make up for this lack of TDN in the poor quality roughages it is necessary to add grains to the ration. Then, in order to have a completely balanced ration for the dairy cow, the feed manufacturer best serves by providing a supplement or concentrate containing proteins, vitamins, and minerals. In some sections of the U.S. it is also necessary for the feed manufacturer to supply a part or all of the grain portion of the ration.

Due to the problems involved in being able to harvest properly cured roughages, it is no surprise that scientists have been actively studying the value of dehydrated forages for dairy cattle for some time. As early as 1910 the U.S. Department of Agriculture reported on attempts to dry forages. Its early equipment proved to be impractical and very expensive. An interest in dehydrating forages was revived in 1925 when heated air was used.

Determining Values

In determining the value of dehydrated forages investigators have used three approaches:

1. The value of dehydrated forages as a complete replacement for the roughage.
2. The value of dehydrated forages as a supplement to the roughage program.
3. The value of dehydrated forages as a partial replacement for the grain mix.

In Kansas (2) tests, Bartley reported the results of two experiments. In the first tests, cows were divided into three groups. The first group was fed field-cured and field-baled hay only. The second group was fed dehydrated alfalfa pellets only. The third group received 75% dehydrated alfalfa pellets and 25% alfalfa hay. A standard grain ration was used for all groups.

The group receiving only dehydrated alfalfa pellets did not perform as well as the controls. In this group milk production declined, cows went off feed, rumination was depressed and the average fat test dropped from 3.8% to 2.3%.

Cows receiving 75% of their roughage as dehydrated alfalfa pellets also were adversely affected, but not to the same degree. The Kansas investigators were quick to point out that it was not the dehydrated alfalfa pellets themselves, but the investigators suggested that it is the form of the roughage that causes the depression in percent of butterfat. Other investigators have shown that the feeding of finely ground roughages to dairy cows will depress rumination and lower the percent of butterfat.

In their second series of experiments the Kansas investigators reported that by feeding smaller amounts of dehydrated alfalfa pellets with poorer quality roughages they were able to induce the dairy cows to increase their consumption of roughages and, as a consequence, increase milk production. In these tests, the roughage consisted of 17% dehydrated alfalfa pellets and 83% other roughage. In one case this other roughage consisted of alfalfa hay and sorgo silage. In the other case the 83% of other roughage was non-legume. In both instances this feeding program resulted in an increased roughage consumption and an increase in milk production. The authors further stated that at the then existing prices the increased production was not economical.

Connecticut Tests

Connecticut and USDA (3) workers reported on a comparison between field-cured and field-baled, artificially-dried chopped, artificially-dried ground, and artificially-dried pelleted alfalfa as the sole source of roughage for dairy cattle. In their first test, they found that the total dry matter and digestible nutrient intake from roughage and grain combined was essentially the same for each form of alfalfa. However, it was necessary to add 10% molasses to the ground, dehydrated alfalfa meal to improve the palatability. The effect on milk production of three forms of alfalfa is given in Table 1.

The table shows that actual milk production was greater for the group of cows receiving dehydrated alfalfa

TABLE 1. Total Milk and Fat Yields as Affected by Form of Alfalfa Fed

Criteria	Form Of Alfalfa		
	Baled	Ground	Pelleted
Actual Milk (lb.)	19,433	20,884	21,709
Fat (lb.)	792	800	797
Fat (%)	4.07	3.83	3.67
F.C.M. (lb.)	19,651	20,346	20,641

TABLE 2. Total Milk and Fat Yield as Affected by Form of Alfalfa Fed

Criteria	Form Of Alfalfa		
	Baled	Chopped	Pelleted
Actual Milk (lb.)	16,328	16,866	16,144
Fat (lb.)	693	710	6.10
Fat (%)	4.24	4.21	3.78
F.C.M. (lb.)	16,925	17,393	15,702

TABLE 3. Effects of Feeding Baled, Wafered or Pelleted Alfalfa Hay to Dairy Cows

Criteria	Form Of Alfalfa		
	Baled	Wafered	Pelleted
Feed Consumed (lb.)	797.2	833.2	811.8
Body Weight (lb.)	1,195.6	1,212.9	1,190.6
Butterfat (%)	4.13	4.15	4.00
Total Milk Produced (lb.)	899.74	887.06	903.93
4% F.C.M. (lb.)	848.83	857.14	853.24

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pellets. However, the percent of fat was significantly decreased and, as a consequence, there was no significant difference in ration effects on F.C.M.

In the second test, field-cured, field-baled hay; dehydrated, chopped alfalfa, and dehydrated alfalfa pellets were compared. In this test, there was marked reduction in the consumption of dehydrated alfalfa pellets. The authors reported a definite difference in the hardness of the pellets between the first and second tests. They attribute the decreased consumption to the increased hardness of the pellet. The effect on milk production for the second test is given in Table 2.

The feeding of pelleted hay in the second test resulted in a significantly lower percentage of fat in the milk. This is in agreement with the first test. Total milk production, the percent fat and total F.C.M. were greater for those cows receiving the baled and chopped alfalfa hays.

Levels Compared

In 1954, USDA and Connecticut (4) workers reported on an experiment designed to measure the lactation response to graded levels of artificially dehydrated and pelleted alfalfa when added to a ration of timothy grass-mixed hay and grain. The timothy grass-mixed hay was fed ad libitum. Grain was fed at the rate of 1 lb. per 5 lb. of fat-corrected milk during the comparison period. The dehydrated alfalfa pellets were fed at four different levels; namely, 0.0, 0.5, 1.0, and 1.5 lb. per 100 lb. live weight per day.

Results of this experiment showed that the addition of each level of dehydrated alfalfa pellets resulted in a decrease in hay consumption, but significantly increased total dry matter, TDN, and net energy consumption. Both average daily milk production and average daily F.C.M. increased with each increment of pelleted alfalfa added to the ration. The fat percentage of the milk appeared not to be affected. There was an increase in the TDN required to produce a pound of milk for each 0.5 lb. of pelleted alfalfa added to the basal ration. The authors indicated that this was in agreement with the findings of other investigators. Other reports, Jensen et al (5), have shown that cows on a relatively high level of nutritive intake are generally less efficient in production of milk than at relatively low levels.

Replacing Grain

Several stations have attempted to replace a part of the grain ration with dehydrated roughage. In a Wyoming (6) experiment, a comparison was made between grain rations containing: (1) no dehydrated alfalfa meal, (2) 20% dehydrated alfalfa meal, and (3) 20% dehydrated alfalfa pellets. During a 140-day feeding period, those cows receiving the grain ration containing either the 20% dehydrated alfalfa meal or pellets decreased in milk production at a faster rate than those receiving the grain ration without dehydrated alfalfa meal.

Hope et al (7) at the Washington Station used a dehydrated grass mixture of orchard grass, ladino clover, alsike clover and timothy in a grain replacement experiment. The ground dehydrated meal was used at a grain replacement rate of 15, 30, and 45%. As the percentage of dehydrated grass in the ration increased, the gain in body weight decreased. Their milk production (4% F.C.M.) followed the same pattern. The authors do not attribute these differences to a difference in TDN intake, but more to a difference in the physical state of the finely ground dehydrated grass. The cows receiving the grain rations containing 30 and 45% of the dehydrated grasses went off feed and did not ruminate normally.

In a later experiment, Blosser (8) compared the grain replacement value of three forms of dehydrated alfalfa, namely: (1) finely ground, (2) chopped, and (3) pelleted. These three forms of alfalfa were used to replace 30% of the grain ration. Only small differences in production were observed. However, the cows receiving the grain ration with 30% pellets produced the most 4% F.C.M. The average daily production of 4% F.C.M. on the ground, chopped and pelleted alfalfa was 33.7, 34.2, and 35.4 lb., respectively. There were more cases of the cows going off feed on the finely ground alfalfa than on the pelleted material.

Calf Starters

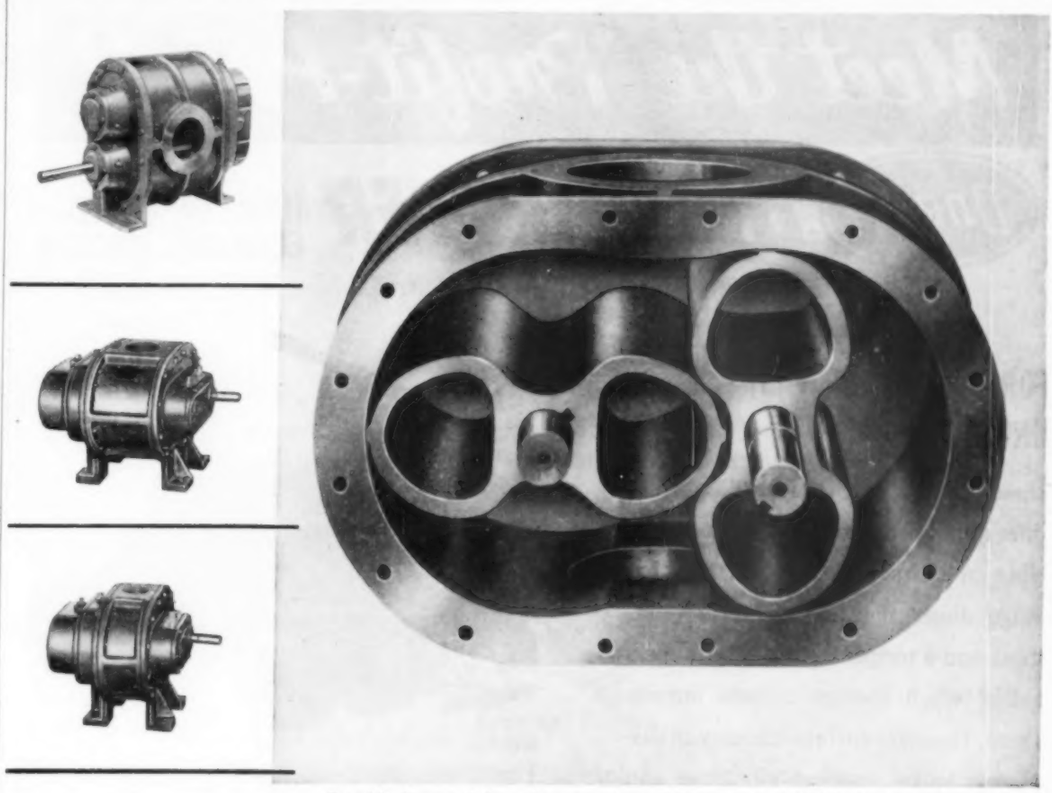
Dehydrated alfalfa has found a definite place in calf starter formulations. Its usage in a calf starter formula can vary from 3.0% to many times this level, depending on the type of formulation desired. In most cases, every effort is made to produce a highly palatable calf starter, and thus, it is necessary to keep the level of dehydrated alfalfa toward the lower level indicated above.

The Connecticut station has published several papers (9), (10), (11), (12), (13), (14) on the use of dehydrated alfalfa for calves. In their early work, Connecticut researchers compared three types of alfalfa: (1) field-cured and baled, (2) dehydrated meal, and (3) dehydrated pellets. The calves consumed considerably more of the pellets, and calves on this ration made the fastest gains. The calves receiving the dehydrated meal ration consumed the least.

In further experiments (11), dehydrated alfalfa meal was fed at varying levels. Four experimental rations were used containing 0.0, 25.0, 50.0, and 75.0% dehydrated alfalfa meal. The growth rates of the calves fed the four rations were inversely related to the level of dehydrated alfalfa meal included in the ration. This was due to the unpalatable nature of the ration. The higher the level of dehydrated alfalfa meal, the lower the consumption.

In a more recent study, the Connecticut (12) workers used dehydrated alfalfa pellets and starter pellets in various combinations. The initial rations contained 10, 15, 20 and 25% of dehydrated alfalfa pellets. For each of these initial levels, the parts of alfalfa were increased weekly at the rate of 1.000, 1.1747, or 1.3494, while the parts of starter were held at their initial levels. No hay or other roughages were fed these calves. Maximum feed consumption was calculated to occur at an initial level of 18.33% and at 1.2149 rate of increase. Dry matter efficiency was found to decrease with the two variables, but total digestible nutrient utilization was maximum at 18.08% initial level of alfalfa increased at a weekly rate of 1.2336. Maximum gain in weight was calculated to be at an initial level of 16.99% and at the weekly rate of increase of 1.1817.

The above experiment ties in with much of the current experimental work involving complete pelleted rations for sheep, beef cattle, and to a limited extent, dairy cattle. Jones, Magill, and Petersen (15) of Oregon State College have compared baled, wafered and pelleted second-cutting alfalfa hay of good quality as sources of roughage for lactating dairy cat-



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tle. Their results are summarized in Table 3.

There were no differences in feed consumption between the three physical forms of hay. There were no significant differences in body weight, total milk produced, or the amount of 4% F.C.M. produced. However, the feeding of pelleted hay (ground through a 5/16-in. screen) resulted in a statistically significant reduction in butterfat percentage as compared with either baled or wafered hay. There was no difference in butterfat production between cows fed either baled or wafered hay. Thus, based on current research, it appears that the wafered hay tends to eliminate the decrease in percent of fat that usually occurs when high levels of a fine-ground, pelleted roughage are fed.

Summary

A review of the literature shows that there have been many attempts made to efficiently utilize dehydrated forages in the rations for dairy cows. Studies have been made using dehydrated forages as: (1) a complete roughage replacement, (2) a partial roughage replacement, and (3) as a partial grain replacement. Usually when dehydrated forage has been fed in a finely-ground meal form, there has been a palatability problem, the cattle have tended to go "off feed," and the rumen has failed to function normally. When pelleted dehydrated alfalfa was used as a complete replacement for the roughage, the results have been more variable. In some instances the pellets have performed well, but in more cases palatability and "off feed" problems have been encountered. In almost all tests, the percent of fat has been depressed. Thus, it it is unlikely that any large tonnages of the present type of dehydrated alfalfa will be used in a complete roughage replacement program.

Supplementing non-leguminous or poor quality roughage with dehydrated alfalfa pellets has resulted in improved milk production and increased body weight gains. Dehydrated alfalfa does offer some possibilities in this area. While the performance of the product has been good in this area, it has not been economically favorable. More research would be of value.

Dehydrated alfalfa and other dehydrated forages have been used as a partial replacement for grain in several dairy cattle feeding tests. While the quality of these dehydrated feeds is high, apparently the energy content is not sufficient to enable them to perform well as a grain replacement. In almost all tests, cows did not maintain production when a portion of their grain ration was replaced with the dehydrated forages. There were also instances of cows going "off feed" and not ruminating normally.

Dehydrated alfalfa has a definite place in a calf starter formulation. A calf starter designed to be fed with farm-grown roughages will usually have a reasonably low level of dehydrated alfalfa. If the starter formula is to be used as both a concentrate and roughage source, then levels as high as 17% give optimum results. Dehydrated alfalfa is a source of proteins, an excellent source of carotene, of minerals and while the evidence is not conclusive, it would appear that there are certain unidentified factors for the dairy calf in dehydrated alfalfa.

Experimental work in beef cattle and sheep feeding has shown that by pelleting either good or poor quality roughages an improvement in feed efficiency and usually an increase in rate of gain can be obtained. The experimental work indicates that the increased rates of gain by feeding pelleted roughages are best explained on the basis of a greater intake of total feed. Tests also show that quality differences in roughages will still be apparent even though the roughages are pelleted. Recent dairy cattle feeding tests indicate that a "wafered" roughage does not produce the characteristic decrease in percent of fat that has been attributed to pelleted, fine-ground roughages. Thus, it appears that more research is needed to determine how dehydrated forages, when they are "wafered" or coarsely ground and pelleted, will perform as a source of roughage for dairy cattle. This field of investigation appears to have considerable promise.

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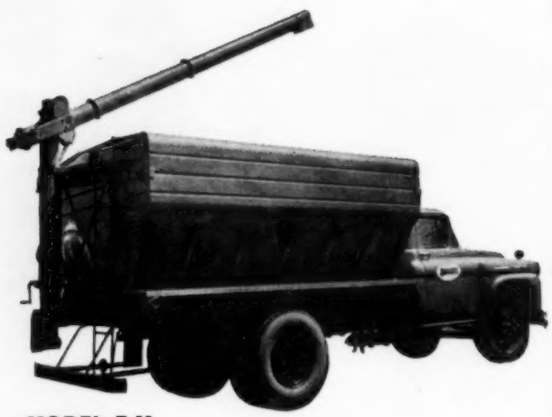

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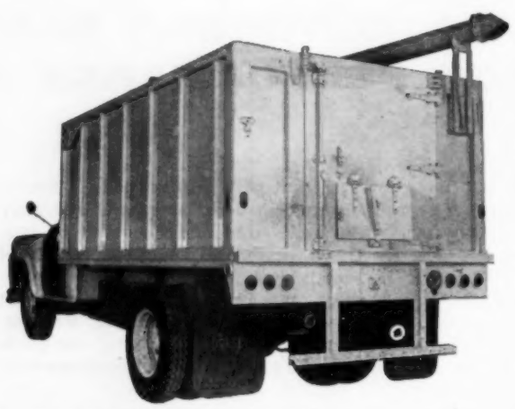

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The Dehydrated Alfalfa Industry: A Measurement of Its Growth

Application of statistical measurements to dehy production indicates trends in the growth of the dehydrating industry.

By Charles E. Reed
Agricultural Economics Department, Kansas State College

EDITOR'S NOTE: A study of measurements of growth of the dehydrated alfalfa industry results in some interesting conclusions by Mr. Reed in the accompanying article. Statistical measurements would indicate that industry production would level out at about 1.2 million tons annually, he states. This figure is subject to many influences and "is not important." But the growth pattern indicated for the industry "is very important if for no other reason than the fact that it indicates a leveling-off process is taking place," he states. "New markets, new uses and additional sales efforts are needed if the trend is to be changed upward."

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The dehydrated alfalfa industry can be proud of its growth. It is impressive. In 1942-43, 238,100 tons of dehydrated alfalfa were produced. Production volume in 1957-58 was 1,064,700 tons, an increase of 447% in 15 years. If the expansion is calculated on the basis of peak year performance (1,163,700 tons in 1955-56), growth is 488%. Were production figures available for years prior to 1942-43, larger percentages would result.

SPECIAL ALFALFA REPORT

Within the period under consideration, production, in physical terms, increased by 826,600 tons. If the same amount could be added during the equivalent future period, the industry would have an output of about 1,891,300 tons 15 years hence. Or, if it again expanded approximately 4½ times, as it did from 1942-43 to 1957-58, production volume would be about 4,791,150 tons by 1972-73.

The usual growth pattern of industries would indicate that the above estimates of future production are too high. It is a matter of common observation that most industries expand rapidly during their youth, but their growing pace slows down as they become mature. The reasons why growth levels off is that markets eventually become relatively saturated, profit opportunities diminish and consequently the number of new firms entering the industry falls off. At complete maturity, increases in industry production volume stem mainly from adjustments within established firms.

Statistical Measurements

A proper measurement of industry growth requires yearly rates of expansion rather than over-all comparison between two relatively distant intervals of time. Several statistical devices for making these rate measurements are available. Moreover, they establish a limit or asymptote which the time series eventually approaches.

Annual production of dehydrated alfalfa is indicated by the dashed line in Figure 1. The yearly fluctuation in volume produced is very noticeable during the later years of this time series. To a certain extent, the succession of peaks and troughs obscures the growth pattern. To show the trend more clearly, a two-year moving average curve has been plotted. This is the solid line of Figure 1.

The average curve shows two things: (1) growth has been relatively continuous from the outset of the period for which data are available and, (2) there is some indication that a leveling-off process is setting in. It is probably safe to assume that fewer new dehydrating units have been established in the last several years than in the 1940's. This would tend to decrease the rate of production growth.

The average line is useful in indicating the method to use for growth measurement. Probably several devices would give a good fit. But the shape of the average line conforms fairly well with a modified exponential curve, so called because its formula is a modification of the compound interest formula.

The modified exponential formula is $Y_C = k + ab^x$, the letters of which have the following meaning:

Y_C=The computed production value for any particular year.

k=The limit to which the series approaches, being an upper limit if "a" is negative and a lower limit if "a" is positive.

a=The subtraction from or addition to "k" which gives the initial value for the series.

b=The rate of change in growth.

^{x}=The exponent which designates the year beginning with "0" for the first year, "1" for second year, "2" for third year, etc.

Computations, using dehydrated alfalfa production figures, gave the formula values $Y_C = 1219.15 - (869.6)(.8618)^x$. The production value for each year was then calculated for values of "x" from "0" to "11". These were plotted on a graph and are shown as the smooth solid curve in Figure 2.

What Is Indicated

What do the figures in the formula indicate? If it be assumed that the statistical device used is the correct one, the annual increment rate of growth ("b" in the formula) of the dehydrated alfalfa industry has been approximately 86% from 1943-44 to 1956-57. This would mean, for example, that if 1951 production volume were 1,000 tons greater than in 1950, the increase in production in 1952 would be 860 tons; in 1953, production would increase by 86% of 860 tons or 739.6 tons and similarly for succeeding years.

The incremental rate of growth being less than 100% means that each year's production increase over that of the preceding year, on an average, tends to become less and less. Eventually the rate of expansion approaches zero. When this occurs, production effectively levels out so that there is very little growth from one year to another. With practically no change in year to year increments, the limit is also approached. In the case of the dehydrated alfalfa industry, this limit is indicated at 1,219,150 tons annually, which is the "k" in the modified exponential formula. If the solid line trend in Figure 2 is extended into the future, it would approach but never quite reach the same value of 1,219,150 tons.

Will the approximately 1,220,000 tons annually be the extent to which the dehydrated alfalfa industry will expand? The writer certainly does not make that prediction. Practically all statistical devices have their limitations, and the one used here is no exception. The growth curve can tell us something of the past but, in common with all techniques, it has limited value for predicting what is to come. At best, the glass we look through into the future is merely translucent—never completely transparent.

It is pertinent to point out that similar statistical techniques are used in estimating future population figures. Almost everyone knows, too, that population estimates have to be revised periodically. Revisions are necessary, not because the statistics are wrong or the method incorrect, but because birth rates change after the forecast is made.

Slowing Expansion

It can be said with some assurance that the dehydrated alfalfa industry appears to be expanding at a slowing pace. The incremental rate is certainly less than 100% and probably the 86% found by the modified exponential formula is not far off for the period covered. If 86% is relatively correct and if growth continues at the same rate, then industry production would level out around 1,220,000 tons.

The rate of growth may change. The fact must be faced that this change could be upward or downward.

Growth rate may be raised if new markets are found for dehydrated alfalfa or if new uses are discovered. The research program of the ADA is properly directed toward finding such new uses. Once uncovered, however, new outlets represent only potential sales. To make of them realized sales requires progressive marketing activity.

The industry's rate of expansion could possibly be increased by deeper penetration into existing markets. This calls for real, imaginative sales promotion. It very frequently hap-

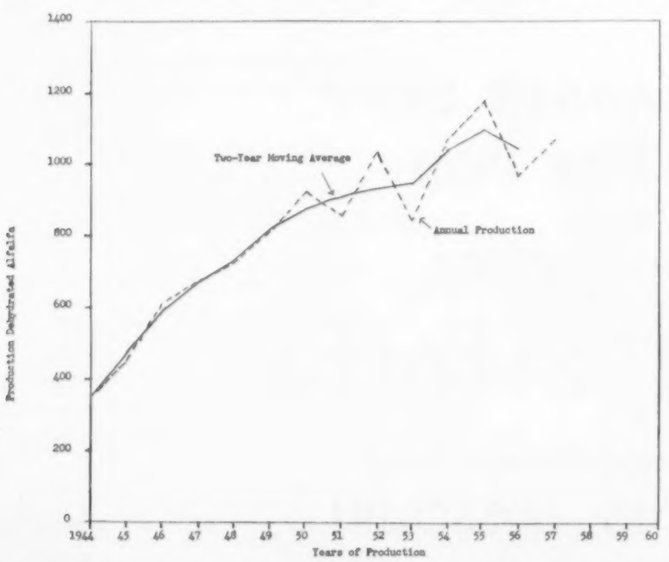

FIGURE 1. Annual production and two-year moving average trend, dehydrated alfalfa, 1944-57, in 1,000 tons.

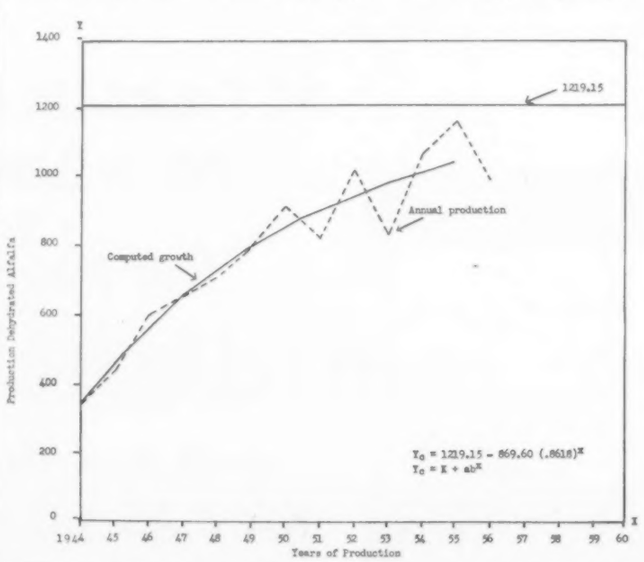

FIGURE 2. Modified exponential trend fitted to annual production of dehydrated alfalfa, 1944-56, in 1,000 tons.

pens that the total actual market of a product is somewhat like an iceberg in that much more of it is hidden than is revealed. If currently realized sales of dehydrated alfalfa represent a situation in which the product largely sells itself, then advanced promotional techniques hold some promise of getting beneath the surface to the larger, hidden part of the market.

Possibility of Decline

How about the possibility of a decline in the dehydrated alfalfa industry growth rate? To consider this question it is necessary to look at the product and its competition. Dehydrated alfalfa offers a wide variety of vitamins and minerals. Particular emphasis has been placed upon its protein, carotene and unknown growth factors.

Only occasionally is dehydrated alfalfa as cheap a source of protein as some of the concentrates. Ordinarily, dehydrated alfalfa should be considered as merely partially competitive with such products as soybean meal or cottonseed meal. If dehydrated alfalfa is used in a ration, however, the protein it provides should be considered as available to replace a part of that usually obtained from other sources.

Several years ago agricultural economists of Kansas State College contacted some livestock feeders regarding their feeding operations. Evidence was obtained that some of these feeders believed a sound feeding program consisted essentially in providing protein in their rations. In a few cases, the use of dehydrated alfalfa was based solely on its protein cost compared with concentrates.

Obviously, dehydrated alfalfa cannot compete on this basis. Upgrading its protein standard could possibly help the dehydrating industry compete in the protein concentrate market if in doing so production costs were not materially increased. Educational work directed at dispelling the idea held by some feeders that protein feeding alone constitutes an all-sufficient program would, however, appear to be more promising. Reduction in fiber content resulting from a higher standard would appeal to the market sector which is primarily energy-minded.

Carotene Emphasis

It is generally agreed that dehydrated alfalfa is the best natural source of carotene. There is, however, competition in this area from synthetic vitamin A. The announcement some time ago that carotene can be obtained from certain molds raises the possibility of additional competition in the future. As feed manufacturers and livestock feeders must take into consideration the cost to them of obtaining carotene or vitamin A, the cost of producing dehydrated alfalfa and its market price become very important factors.

According to economic theory, good competitive conditions tend to reduce to a minimum the margin between cost and price. In the long run the cheapest source (which means also that provided at least cost) will tend to be favored by buyers if quality is comparable. Consequently it is to the better interest of the dehydrated alfalfa industry for its individual producers to become cost-conscious. If dehydrated alfalfa proves to be even the next cheapest source of carotene for buyers, then sales promotion strategy in its behalf should avoid putting all eggs in the carotene basket.

Dehydrated alfalfa is associated, probably more than any other feedstuff, with an unknown factor (or factors) which promotes growth in animals above that explained by nutritional balance. Especially important is the ability also to enable ruminants to utilize poor quality roughages more efficiently.

Scientists will probably succeed in isolating and identifying the responsible factor. When that occurs it may be discovered that the factor can be synthetically produced or perhaps obtained from other natural sources more economically than it can be provided in dehydrated alfalfa. In the meantime, however, the dehydrating industry should probably make the most of the relatively unique position of its product. The economic value of the growth promoting characteristic of dehydrated alfalfa depends on its results when fed to livestock. Assigning a name to the cause will not materially add to that value, although it may simplify some advertising problems.

Human Elements

Many questions could probably be raised regarding the growth analysis here, and especially with respect to the upper limit of expansion for the industry. The estimated top of 1,219,150 tons annually is no hard and fast figure. What the peak will be probably depends more on the human elements involved than on anything else.

It may be charged that the estimate is too conservative. Did not the industry produce almost as much in 1955-56 as is indicated for its ultimate peak? It did, and current industry capacity is probably capable of surpassing the estimated limit. But in 1955-56, disappearance was considerably short of production and a sizeable carryover of stocks resulted. Moreover, prices that year were very low. The point is that disappearance or sales would have been a more proper basis for measuring the industry's growth. Had such data been available and used, the forecasted figure would undoubtedly have been lower.

Actually, the figure at which we arrived is not important. The growth pattern for the industry, however, is very important, if for no other reason than the fact that it indicates a leveling off process is taking place. New markets, new uses and additional sales efforts are needed if the trend is to be changed upward.

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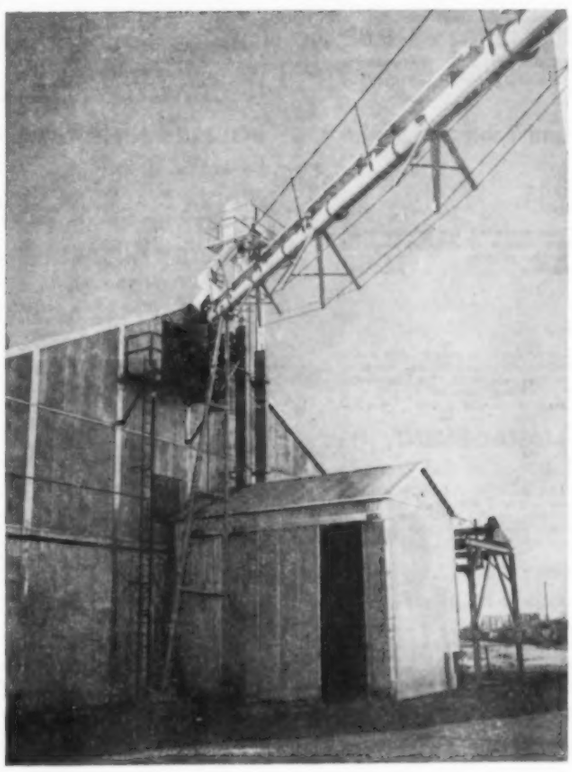

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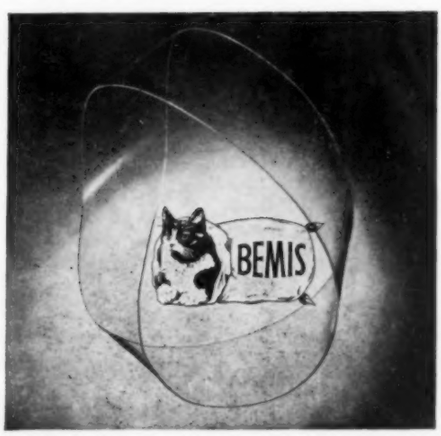

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By Donald R. Acklin
Feedstuffs Special Writer

The ability to change to meet the demands of a changing agriculture is bringing steady growth to the Luckey (Ohio) Farmers Exchange Assn.

With headquarters in Luckey, the firm also has branches in Lemoyne and Woodville, Ohio. The Lemoyne installation was completed in 1950 to allow the firm to mix a brand of poultry feed of its own. The Luckey and Woodville plants do custom mixing only.

Installation of the new mill at Lemoyne along with mechanical improvements in recent years and other improvements under planning have kept the firm apace of the times.

In addition to its service, the firm offers feeder meetings, gifts and other promotions that build its good will in the communities it serves.

The association's main mill is at Lemoyne, where milling of the firm's Gro-Mor brand amounts to 200 tons monthly. There are two full-time employees and one part-time at Lemoyne. In addition to the office manager, Rudy Pfeif, Ronald Marsh is foreman of the mixing and grinding department.

Charges for mixing and grinding are 12¢ cwt. for fine grind and 10¢ cwt. for coarse. Charges for bulk grinding are 10¢ fine and 8¢ coarse. About 50% of feed sales are for beef cattle, 25% for hogs and 25% poultry.

General manager of the association is Vincent Kahle, who points out that most of the association's customers grow their own grain. He estimates that 90% do their own grain grinding for cattle feeding.

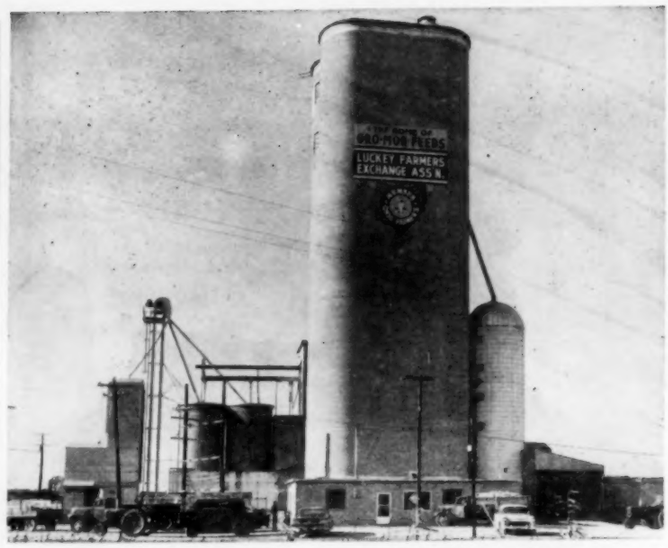
At Lemoyne there's a 110,000-bu. capacity elevator having four large silos of 65,000-bu. capacity and eight smaller silos ranging in capacity from 2,000 to 10,000 bu. The facility, built in 1950, was designed by Ray Pelon of Whitehall, Mich. Total volume of sales at all three branches amounts to $1.5 million per year.

Complete feeds sold, besides the association brand, are Wirthmore, Murphy and Ohio Farmers. There are 22-in. Bryant mills at all three locations, each having a 75-h.p. drive and 30-h.p. fans. Other equipment at Lemoyne includes one Sidney and one Kelly-Duplex mixer, each of two-ton capacity, a Shanzer drier rated at 500 bu. per hour capacity, a Clipper mill with a Gustafson treater, a Howes cleaner, two Western gyrating cleaners and three Sidney rotary cleaners.

"We also recently installed a Hawthorne-Seving cob conveyor in a boom silo which will hold 35 tons of cobs," says Mr. Kahle. "This silo is 16-ft. in diameter x 50 ft. high. The conveyor is 8 ft. wide x 17 ft. long located inside the silo 12 ft. from ground level. We also designed and installed a cob agitator using a 4-in. oil well casing attached to a shaft equipped with a universal joint. The shift is driven by a 5 h.p. gear motor. An unusual feature of our design is that the casing at the bottom swings free. It's equipped with curved rods extending outward 3 ft. at 4-ft. intervals. The arrangement is very effective in kicking the cobs onto the conveyor."

Cost of the entire installation was about $12,000, but Mr. Kahle says it is a good investment, for cobs are being sold to customers at $2 ton. Sales have been averaging $200 per month. A metal-wall building encloses the conveyor to hold down dust and debris and to lower insurance rates.

No bulk feed is sold at the mill, "but we're planning to handle bulk feed next season," says Mr. Kahle. "We're also planning on installing a molasses mixer and a pellet machine. No definite plans have been finalized on any of these future projects as yet." Hours at the mill are 8 a.m. to 5 p.m. 5½ days a week from November to February, and 8 to 5:30 from February to November. "During har-



NEW FEED FACILITY—Newest facility of the Luckey (Ohio) Farmers Exchange Assn. is this elevator and feed mill at Lemoyne, Ohio. It is one of three units owned by the association. The Lemoyne mill does custom mixing and manufactures the association's complete poultry feeds. Grain storage capacity of this unit is 110,000 bu. and its production of Gro-Mor Feeds is about 200 tons a month.

OFFICE MANAGER — Rudy Pfeif, office manager of the LeMoyne, Ohio, branch of the Luckey (Ohio) Farmers Exchange Assn. is shown in the attractive office of the new feed mill checking a customer's feed order. The new mill was built for the manufacture of complete feeds. Plans for bulk feeds are now under way.

VALUABLE SIDELINE—Vincent Kahle, general manager of the Luckey (Ohio) Farmers Exchange Assn., is shown here with a sideline operation which he terms an "important one" to the association. A new activity of the association, the sideline is custom spraying of barns and livestock. An 8-h.p. gasoline engine provides the power for the 100-lb. pressure sprayer. Equipment includes a 250-gal. capacity tank and two 100-ft. hoses.

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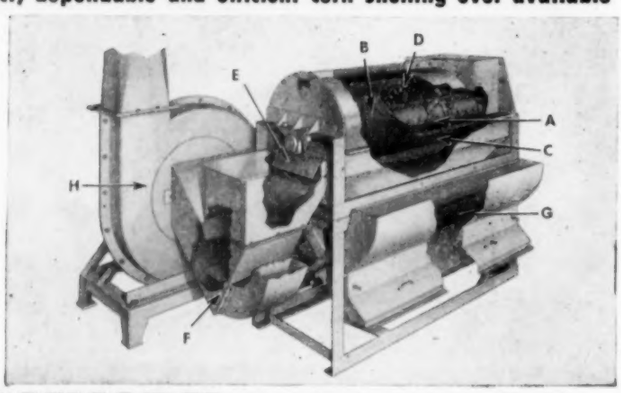

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Farm and Feed Salt NEWS

FROM INTERNATIONAL SALT COMPANY, INC.

HOW TO ESTIMATE YEARLY SALT NEEDS

The chart below gives average annual salt consumption for individual farm animals. With it, you can roughly estimate how much salt you should sell annually to each customer.

Dairy cattle	30-77 lbs. per animal
Calves	6-12 lbs. per animal
Swine	6-12 lbs. per animal
Lambs	3-6 lbs. per animal
Sheep	6-12 lbs. per animal
Beef cattle	12-24 lbs. per animal
Horses	12-36 lbs. per animal
Poultry (in mashes)	½-1 lb. per animal

POWERFUL SALES AIDS FOR BLUSALT—*FREE!*

To help you sell more high-profit Sterling Blusalt this year, you can get a variety of free sales aids from International. These include a colorful "Authorized Dealer" sign . . . an animated counter piece showing a cow actually licking a Blusalt Lik . . . and other attractive point-of-sale items. You can also get Sterling Blusalt ad mats and publicity notices that mention your name for insertion in local papers. Ask your Sterling representative, or write to us direct.

Did you know?

- Approximately 1,500,000 farm families in the United States derive all or a major part of their income from dairy cows.
- A flock of unthrifty chicks with a high death rate and retarded sex development was helped by salt, according to a report in the Journal of American Veterinary Medical Association. The ration of the retarded chicks contained only 0.18 per cent salt. An increase in the amount of salt (to 1 per cent of the total ration) resulted in immediate improvement in the condition of the flock.

Planned sales bring extra profits in trace-mineral salt, specialty items

Many successful dealers are finding that a well-planned record system pays off with extra profits in high-markup items such as Sterling Blusalt, medicinals and special feeds. Such a system provides an opportunity to remind customers when it's time to buy certain essential items they might otherwise overlook. The resulting regularity in customer purchases speeds inventory turnover and permits planned ordering.

Most farmers don't feed enough salt and trace minerals free choice. Do *your* customers a favor! Remind them to buy and feed Sterling Blusalt—salt plus 7 trace minerals (manganese, iron, sulfate sulfur, copper, cobalt, iodine and zinc) in scientifically derived proportions. Available in bags, blocks and Liks.

Twin Elm Farm
R.F.D. #2
Farmtown, U.S.A.
Charles Grey, owner

Dairy cattle	40
Calves and young stock	20
Beef cattle	10
Sheep	—
Laying hens	500
Broilers	—

	ESTIMATED YEARLY CONSUMPTION	PURCHASES			
		January	February	March	April
STERLING BLUSALT	3200 #	2 Cs Liks 3 bag	4 bags		
DAIRY FEED	75 tons	6 tons	7 tons		
LAYING MASH	20 tons	1 ton	1 ton		
WHEAT BRAN	3 tons	—	—		
SUPPLEMENT	1 ton	—	—		

One of the more common record systems is to use 5" x 7" cards, one per customer, as shown here. Why not start a file yourself? It's a big help to profitable selling.

INTERNATIONAL SALT COMPANY, INC., SCRANTON, PA.

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Boston, Mass.	Cleveland, O.	New Orleans, La.	Richmond, Va.
Buffalo, N. Y.	Detroit, Mich.	New York, N. Y.	St. Louis, Mo.

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vest season," he said, "we're open practically any time customer demand warrants."

No bulk fertilizer is processed by the firm, although bulk fertilizer from Royster and Woodville lime is picked up by the mill and spread with its Baughman spreader. Sales of both liquid and dry fertilizer total $75,000 annually, with bulk accounting for 60% of the volume.

Other rolling stock includes three 30-bu. capacity grain trucks to haul grain out of farmers' bins. Luckey uses both a paddle and an auger-type conveyor. "We've also gone into barn and livestock spraying, using portable equipment," says Mr. Kahle.

"This consists of a Hudson 600-lb. pressure sprayer mounted on a two-wheeled trailer. Power for the sprayer is provided by an 8-h.p. gasoline engine. Equipment includes a 250-gal. tank and two 100-ft. hoses with trigger-type guns. Capacity of the sprayer is 10 g.p.m.

"We're using a 1950 Ford auto to pull the trailer and the car is painted up in various hues so the whole looks like some carnival contraption coming down the road," smiles Mr. Kahle.

Insecticides used are Standard Oil and Dow. Other customer services include soil testing, an animal health service and the sale and erection of farm fences.

In addition, the firm both buys and sells a full line of farm seeds. Annual sales of all types of seed total $30,000. All kinds of feeding equipment are sold. Other miscellaneous sales include coal, tile, barn ventilators and barn cleaners.

Principal advertising by the firm is through what Mr. Kahle calls personal contact. "Whenever a customer comes in to any of our offices to place an order, pay an account, or even register a complaint, he is always presented a gift. This is some kind of useful tool, a screwdriver, a close-quarter hacksaw, a tack hammer, an Allen head wrench, or something similar.

"We spend about $150 a month on gifts, including pencils during the holiday season; buying in quantity lots of 500 gifts at a time. We consider this continuous gift-giving our most important goodwill builder," Mr. Kahle said.

"We also hold promotional forums from time to time, in which I personally invite about 30 customers who are prominent farmers to attend. We rent a town hall for this, use our slide projector to illustrate what's new in feeds and fertilizers and serve coffee and donuts after a question-and-answer period on any subject raised for discussion," he explained.

Three area weekly newspapers are also used for seasonal display advertising costing $20 a month. Rounding out the firm's promotional activities is a co-op booth at the Wood County, Ohio, Fair which is shared with Ohio Farmers Grain & Supply Assn., Fostoria.

"Each year we buy prize-winning calves raised by 4-H Club members," Mr. Kahle said, "at a higher price than normally could be obtained by the winners, re-sell the calves at a loss and charge the difference to good will. We also buy some pigs for a popular 'catch-a-pig' contest, with our name mentioned prominently as a contributor."

New Jersey Event

TRENTON, N.J.—Robert E. Miller, Beacon Milling Co., Cayuga, N.Y., will discuss integration in one of the talks for poultrymen during New Jersey Farmers Week Jan. 26-31 in Trenton. A special program on Jan. 28 has been arranged for poultrymen.

The question of whether New Jersey's egg marketing cooperatives should merge will be discussed by Henry W. Bradford, U.S. Department of Agriculture. Among other speakers will be Dr. Alfred Van Wagenen, Northeastern Poultry Producers Council, Trenton.

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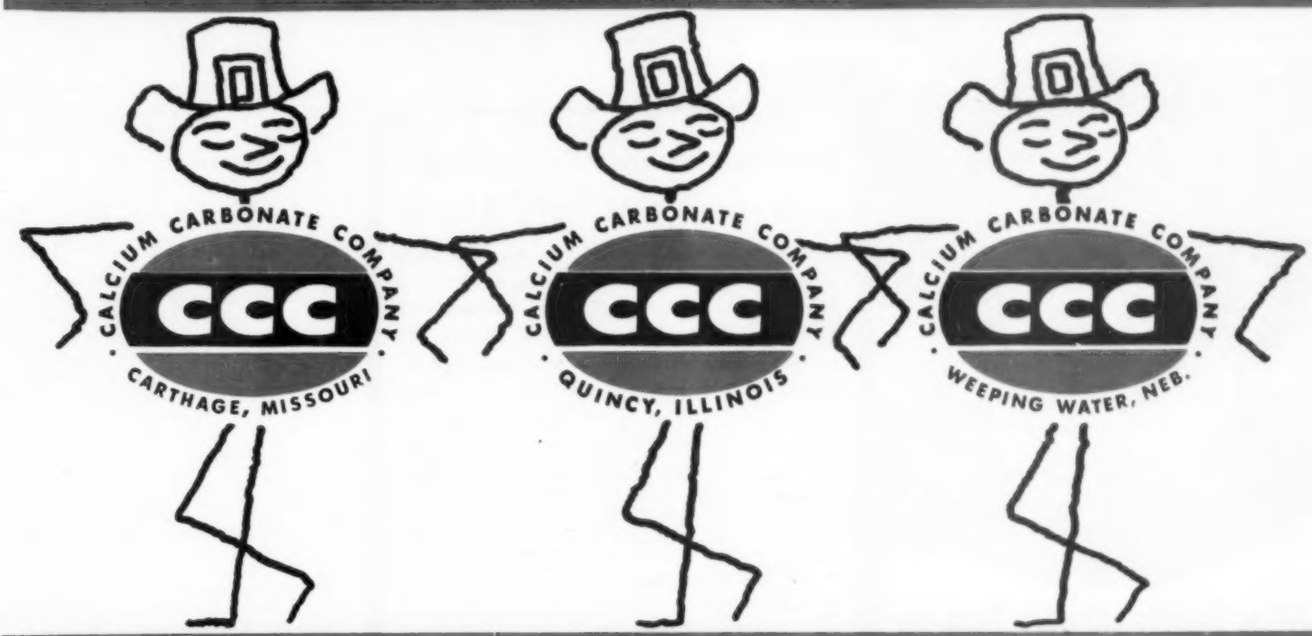

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Feed Control Comment

By BRUCE POUNDSTONE
Secretary, Association of American Feed Control Officials
Kentucky Agricultural Experiment Station, Lexington

The Association of American Feed Control Officials

Most feed mixers, even the smaller ones, have copies of the official publication of the Association of American Feed Control Officials. This is the key reference work to ingredient definitions and suggestions for labeling of feedstuffs. Even though this is used extensively by mixers, there are some who do not fully understand how the association operates. A better understanding of this will make it possible for greater use of the services thus available.

The Association of American Feed Control Officials is made up of officers in each state and the Dominion of Canada and the administrators of federal laws regulating the sale of commercial feed as well as persons in experiment stations, bureaus and other divisions of government concerned with the examination of feeds and livestock remedies.

Investigators serve as the backbone of the association. Investigators are members of the association assigned to groups of products running alphabetically from alfalfa products to yeast. A question in any of the 28 subjects is referred to the appropriate individual, and it is his responsibility to work with those involved and determine and recommend the answer. If it is a matter requiring approval of the association, a preliminary statement may be prepared and the final approval given at the next national meeting. A list of the investigators will be found on page 8 of the 1959 annual publication of this association.

Although the investigators cover a wide range of subjects, many special problems are handled through assignment to special committees. An example of this is the labeling of pet foods. This is becoming a matter of increasing importance. The committee on this is made up of control officials and representatives of the Pet Food Institute.

One of the oldest committees of the association is the "states relations" committee. This committee likewise is made up of representatives of industry and control officials, and serves as a general clearing house for matters that cannot be assigned to some special committee.

Other committees of interest are medicated feed labeling committee and the uniform feed bill and regulations committee. All are listed beginning on page 5 of the publication.

Any questions with regard to the association may be referred to any member of the association or by writing directly to the secretary. Copies of the annual publication may be purchased for $5 each from the treasurer, R. T. Wetherbee, One Ivy Lane, Burlington, Vt.

EDITOR'S NOTE: Mr. Poundstone will be happy to answer any questions relative to feed control. Feed men who have questions should send them to: Feed Control Comment, Feedstuffs, P.O. Box 67, Minneapolis 40, Minn., and they will be passed on to Mr. Poundstone.

Allied Adds Bulk Bins At Iowa Feed Plant

MASON CITY, IOWA—More than 400 tons of additional bulk feed storage capacity has recently been completed at the Allied Mills, Inc., feed plant here. Twelve new bulk feed bins and a new truck scale have gone into use, and total bulk feed capacity is now some 500 tons, according to Glenn Uding, plant manager.

With the addition of the new bins, 12 more types of bulk feed can be kept on hand, it was pointed out. Also, dealers will have an increased opportunity to purchase bulk feeds in odd ton lots.

Other current changes at the plant here include four new diesel tractors and trailers.

RESIGNS FELLOWSHIP

MEMPHIS, TENN.—Mrs. Edith Conkerton, who held one of the National Cottonseed Products Assn., Inc., fellowships at the Southern Regional Research Laboratory since 1948, has resigned to spend more time with her family. Mrs. Conkerton, a graduate chemist, has conducted investigations of a rapid, accurate chemical measure of cottonseed meal's nutritive value.

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Replace many ingredients with one COMPLETE Blend!

Each of these New Englander products can completely fortify the feeds you mix. Ocean-Fresh fishery products and other farm-proven ingredients give these Blends every essential vitamin, the highest quality protein, and a full measure of unknown growth factors—everything your feeds need to boost egg production and hatchability, to produce maximum feed efficiency in broilers and turkeys. The uniformity and potency of these complete Blends are guaranteed. You save money, to say nothing of mixing time and inventory space. So what are you waiting for? Drop a card to our distributor nearest you or write us direct for full details.

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Mr. C. J. Hennick proved to himself the value of feeding Hygromix feeds. "I think these pigs have done real well," he says.

"I'll never worry again about worms"

"Hygromix® does the job . . . I'm sure about that!"

by Eugene S. Hahnel

C. J. Hennick and his son, John, raise about 140 pigs a year. Hygromix sounded like the answer to their worm problem, but they wanted to make sure it worked.

They put their pigs on Hygromix feeds as soon as they would eat. At about 90 pounds, they test-wormed them to see if Hygromix was doing the job. "I kept close watch of them," says Mr. Hennick, Sr., "and couldn't find a worm. With our other pigs we used to find ten to twelve worms per pig. Hygromix does the job . . . I'm sure about that!"

"Those worms just never got started," Mr. Hennick continues. "I used to have to wait until 8 or 10 weeks to worm, and damage had been pretty well done by then."

Until the discovery of Hygromix, worm damage became well-established in the pig before worms could be attacked. Worm control with Hygromix feed starts with the baby pig. Control continues throughout the critical growing period when most of the damage takes place. Hygromix accomplishes this by killing the young worms as they enter the intestinal tract.

Wilford "Bill" Kolpin (right), feed manufacturer's representative, is an interested listener as Mr. Hennick describes how Hygromix-fortified feed controlled the worm problem in his herd. "I'll never worry about worms again so long as I use feed with Hygromix" was Hennick's conclusion.

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Herbert Bromberg

MARKET ANALYST—Herbert Bromberg has joined Commercial Solvents Corp., New York, as a market analyst attached to the company's market development department, announced Dr. F. E. Dolian, manager of the department. Mr. Bromberg graduated from the University of Pennsylvania and did graduate work in marketing at New York University.

Computer to Control Chemical Plant

ST. LOUIS — Monsanto Chemical Co. will put the industry's first computer-controlled chemical plant on stream during 1959, Howard K. Nason, Monsanto vice president and general manager of the company's Research and Engineering Division, announced here.

"To the best of our knowledge, this will be the first chemical plant to use an electronic computer for the direct, on-line control of the over-all process," Mr. Nason said. "It will be installed in an existing manufacturing unit which is already highly instrumented by today's standards." Location of the plant and the process involved were not disclosed.

By use of the computer, Monsanto expects to achieve maximum productivity from its plant investment at minimum operating cost. The computer will achieve this by continually monitoring the process conditions, making numerous calculations and automatically adjusting the controls for optimum results, Mr. Nason said.

Tallow Prevents Bloat In California Trials

SAN FRANCISCO — Pre-feeding of concentrates containing animal tallows has been found to prevent bloat in cattle being fed fresh, bloatable legumes, according to Dr. James Boda, University of California.

He said that feeding .5 to .85 lb. of tallow per steer daily has reduced both the incidence and severity of bloat when a heavy green chop ration is being used. The tallow acts as an anti-foaming agent, preventing the formation of foam in the rumen which appears to be the principal cause of bloat.

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Report Describes New Processing Equipment

WASHINGTON — More efficient systems of processing chickens and turkeys are described in a marketing research report issued recently by the U.S. Department of Agriculture.

USDA researchers estimated that a plant handling 250,000 boxes of ready-to-cook chicken a year can save about $3,500 by using new equipment described in the report. They said another $2,000 a year can be saved by the use of an integrated packing line which provides better drainage and an opportunity for checking the product.

Described is a hydraulic tank tipper that transfers poultry from chill tanks to packing table at a great saving in cost of labor and equipment. The discomfort and fatigue of earlier methods where birds were moved by hand are greatly reduced. The report also contains general guide lines for more efficient layouts in the packing area, the size of crew for best results, and the respective advantages of the gravity chute and the monorail chain or cable conveyor.

Engineers in USDA and at the University of Georgia studied seven ice-packing poultry plants in Georgia for the purpose of devising more efficient systems.

A free copy of the report, "Methods and Equipment for Ice-Packing Poultry," Market Research Report No. 242, may be obtained from the Office of Information, U.S. Department of Agriculture, Washington 25.

FEED BUSINESS CHARTERED

MONTPELIER, VT.—J. A. Ryan Co., Inc., Milton, has been granted a charter to operate a grain and feed business, it has been reported at the office of the secretary of state here. Authorized capital structure was established at 2,000 shares of no par value common stock. Incorporators were listed as J. C. Ryan, Ernest E. Tatte and Estelle B. Gain, all of Milton.

USDA Names Director For New Laboratory

WASHINGTON — Dr. William A. Hagen, Ithaca, N.Y., has been named director of the U.S. Department of Agriculture's new National Animal Disease Laboratory, now under construction at Ames, Iowa.

His appointment was announced by Dr. Byron T. Shaw, administrator of USDA's Agricultural Research Service.

Dr. Hagen has previously worked with USDA when he served as consultant on a number of animal disease and other veterinary medical problems.

He was more recently dean of the New York Veterinary College of Cornell University.

In 1944, during a leave of absence from Cornell, he reviewed the field activities of USDA's Bureau of Animal Industry and made recommendations for continuing improvements.

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Actual photograph of a 32% protein dairy concentrate.
Actual photograph of Sohio's micro-prilled feed urea.

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Sized and shaped to mix... and stay mixed... in your feeds

Compare the size and shape of Sohio micro-prilled feed urea with ingredients of a 32% concentrate shown above. The similarity is the reason Sohio Feed Urea mixes readily . . . *and stays mixed.* Won't separate or settle out of your mixed feeds.

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Profit by formulating your ruminant feeds with Sohio Feed Urea. The minimum 262 percent protein equivalent (42% N) cuts formulation costs . . . and you benefit too from unmatched handling qualities and a year 'round dependable source of supply. Call the "Man from Sohio." He'll explain Sohio service, whether rail or truck delivery, or plant pickup at Lima.

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7-58

UP OR DOWN

By Dr. Leonard W. Schruben, Agricultural Economist, Kansas State College

Hog Numbers Increase with Favorable Prices

Never before, since records have been kept, has the hog-corn price ratio been as favorable for so long a period as during the past year and one-half. This means producers have had strong incentives to increase hog production. More feed will be fed. Many producers will race to an early market. This means a larger market for commercial hog feed in 1959.

The long-time average hog-corn ratio is about 12. In this past year, the U.S. hog-corn price ratio hit 20 or above for two consecutive months. It was 19 or above for four months and has been above 14 since January, 1957. With these favorable price ratios, the ground work has been laid for a big expansion in hog numbers in 1959 and 1960. But, watch for lower prices by the fall of 1959 and during 1960.

The hog-corn price ratio is the number of bushels of corn you will be able to buy with the money you receive from the sale of 100 lb. of hogs. It will give you a guide as to the relative profit to be had by feeding hogs. When the hog-corn price ratio is high, prices are favorable to feeding hogs. When it is low, it is more profitable to sell corn than it is to feed hogs.

When ratios are high, farmers are stimulated to increase the number of hogs produced. When they are low, hog production is reduced. As a result, the hog-corn ratio is a good guide to changes in hog production. This in turn provides an indicator of hog prices and the business climate for commercial feed sales.

Hog-Corn Ratio High

Exhibit 1 shows a count of the number of months that the ratio has been at certain levels. Here is how to read this exhibit. For example, find the "20 or above" line in the first column and read over on that line until you find a "1" under the column that has a "2" at the top.

This means that once since 1910 the hog-corn price ratio went for 2 months at 20 or above. Likewise, once since 1910, the hog-corn ratio was 18 or above for as long as 8 months. You will find this indicated on the third line.

Now you may think all this is complicated to read. And it is; the hog situation is complicated. However, it will give you a basis for comparing reasons why increasing hog production is on the gain at the present time.

Near Record Numbers

A report by USDA of farmers' intentions to farrow sows in the spring months of 1959 was released in December. This report indicated farmers intended to farrow 8,317,000 sows for the spring pig crop. This would indicate about 59 million pigs this spring. The 1958 spring pig crop was just under 53 million head. Only the 1942, 1943 and 1951 spring crops have been larger than the crop in prospect for 1959 since records were started in 1924.

The total number of hogs to be marketed in 1959 will total 101.5 million head if spring farrowing fulfills expectations. You can see how this number compares with earlier years by looking at Exhibit 2.

Only in the war years 1942 and 1943 were more hogs available for marketing or retention as breeding stock than will be available in 1959. The recent peaks were 1951, when 100.7 million pigs were saved, and 1955, when 91.7 million were saved. Of course, many things happen to cause changes, but in past years farmers have followed their intentions fairly closely, although 1958 proved to be an exception and, to be sure, the same change may happen in 1959.

Price Prospects

What will the hog-corn price ratio do in 1959? What will the hog price pattern look like?

Let us consider first the price prospects for corn. With a record supply of feed grains on hand, it is not likely that the price of corn will exceed by very much, if at all, the loan rate for the period between now and the 1959 harvest. Much of the corn was harvested in good keeping quality. It can reasonably be expected that farmers will hold it off the market at less than support prices. The price will edge near the non-compliance loan rate and perhaps during the summer exceed it by a few cents a bushel. This in turn means the country price of corn will vary from 90¢ to $1.10 bu. This will vary somewhat by location.

In past swings of the hog-corn cycle, the price ratio has dropped from high levels to low levels before hog numbers declined. Before this present hog cycle is over, we can expect a hog-corn ratio in the vicinity of 9. When this happens, most producers will not have much incentive to continue to produce hogs. Numbers will start down followed by prices going up within 12 to 18 months.

Will the corn-hog ratio reach a low of 9 by the end of 1959? This is not likely. We can, however, expect the hog-corn ratio to approach the all-time average of 12 before the end of the year, but it probably will not actually reach this level until the November low.

Hog prices since 1957 are shown in Exhibit 3 along with a forecast for 1959. No one can guarantee a given forecast will be correct. However, odds of about 3 out of 4 would indicate a price pattern fairly close to the line in the center of the shaded forecast area in Exhibit 3.

The price pattern seems a rather logical development providing something doesn't happen to change the plans for farmers indicated in the most intentions-to-farrow report. Hog prices in 1959 can be expected to drop to the $13 to $14 level by fall with a summer high of about $18.

Hog-Corn Price Ratio	Consecutive Months																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
20 or above	–	1																				
19 or above	2	–	1																			
18 or above	5	1	–	1	–	–	–	1														
17 or above	7	1	2	1	1	–	–	–	–	–	–	–	1									
16 or above	1	5	2	–	2	4	–	–	–	–	–	1	1									
15 or above	8	3	1	1	2	2	1	2	–	1	–	1	–	1	–	–	–	–	1			
14 or above	7	3	1	1	1	–	1	1	–	1	–	–	–	1	–	1	–	1	1	–	1	1

EXHIBIT 1. Hog-corn ratios, U.S. Numbers of times ratio above certain levels for consecutive months, January, 1910, through November, 1958.

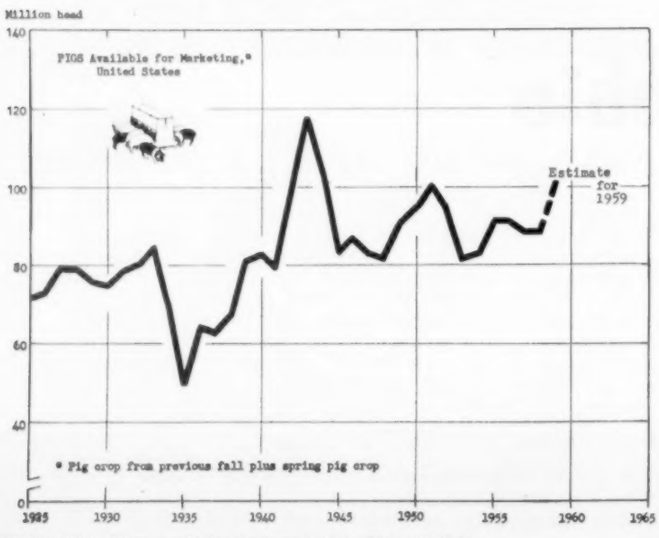


EXHIBIT 2. Pigs available for marketing, U.S., 1925-59.

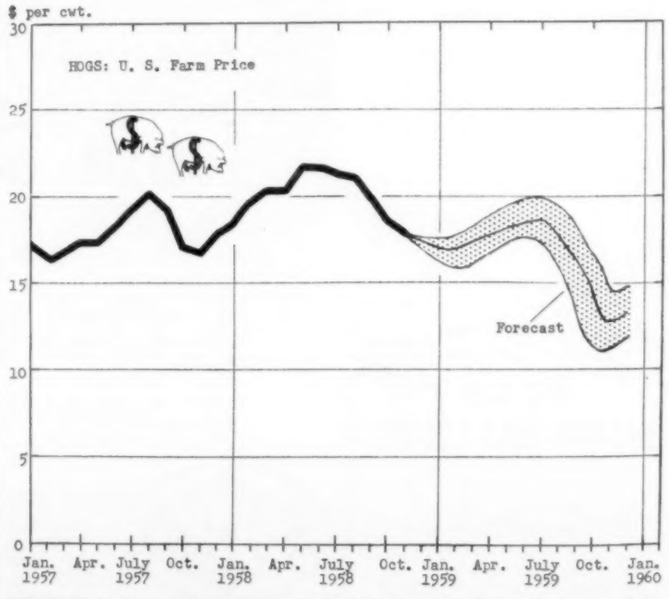


EXHIBIT 3. Hogs, U.S. farm price from 1957, with forecast through 1959.

Dried Milk Production, Stocks Show Decrease

WASHINGTON—Production of dried skim milk for animal feed totaled 950,000 lb. during the month of November, a drop of 10% from the same month of 1957 and 9% from the 1952-56 average for the month, the U.S. Department of Agriculture reports.

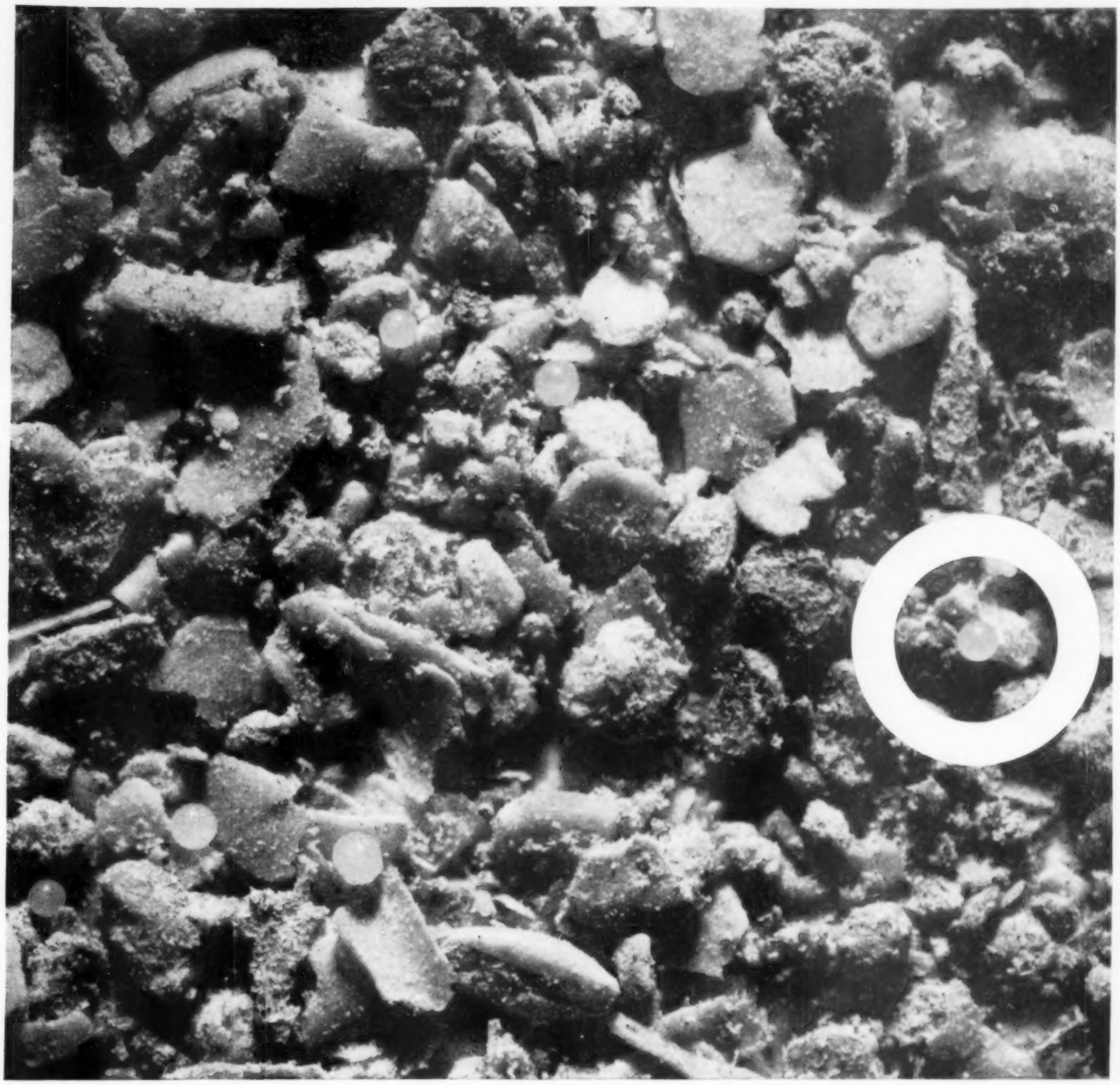
For the first 11 months of 1958, total production was 14,230,000 lb., 11% less than in the same period of 1957.

Manufacturers' reported stocks were also thin as of Nov. 30, 1958, the report shows. Reported was a total of 545,000 lb., 45% less than a year earlier and 53% off from the 1952-56 average.

Dried buttermilk production for the month was 4,734,000 lb., an increase of 29% over the average, but off 3% from November, 1957. Total output for the first 11 months was 66,450,000, an increase of 2% over the same period a year earlier.

Manufacturers' stocks of dried buttermilk Nov. 30 were also down from the average for the date and from Nov. 30, 1957. Stocks were 41% less than the average for the date and 6% lower than a year earlier.

November selling prices showed an average of 9.64¢ lb. for dry skim milk for animal feed and 13.04¢ for buttermilk.



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Vitamin A leads a hard life among the other vitamins, the antibiotics, and the minerals in a commercial premix, as seen here at 25× magnification. A crystal of manganese sulfate, beneficial though it be to the bird, makes a rough traveling companion for anything as delicate chemically as vitamin A. As the temperature rises, so does the rigor of the situation.

Striving to be best rather than first at meeting the challenge, DPi has worked out its own way of protecting microdroplets of the stable ester, vitamin A palmitate, within such little gelatin spheres as shown above.

PGB-250 Dry Vitamin A is the product. One gram of the spheres delivers 250,000 units of vitamin A. There are also *PGB-30* at 30,000 units per gram, *PGB-20* at 20,000 units per gram, and *PGB-10* at 10,000 units per gram. We can also supply the product with vitamin D content.

In this premix containing 5% manganese sulfate, after six months at a tropical 100°F, our tests have shown 85% of the vitamin A recovered. At the same temperature with relative humidity up to a realistic 58%, the researchers still found 68% of the vitamin A after six months. This is impressive performance —all the more so with no biological availability traded off for the chemical stability.

Any producer of feeds or premixes who is willing and able to run his own tests on the performance of *PGB-250* in his own products is cordially invited to communicate. If he wants to take our word for it, he can merely ask for a quotation from ***Distillation Products Industries,*** Rochester 3, N. Y. Sales offices: New York and Chicago • Charles Albert Smith Limited, Montreal and Toronto.

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Pneumatic Conveyors For Farms Studied

URBANA, ILL.—Agricultural engineers at the University of Illinois are developing small pipe, high pressure pneumatic grain conveyors for use on farms.

H. B. Puckett, U.S. Department of Agriculture engineer at the University of Illinois who is working on the project, said an advantage of a pneumatic system is its simple construction. All that is needed for its operation is a compressor and injector at the feed supply and a pipe to the feeding area. Researchers are using inexpensive, lightweight steel pipe for the flexible conveying system.

A disadvantage of a pneumatic conveying system is its more costly use of power, Mr. Puckett said, but he indicated that this is outweighed by the advantages of the system.

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She's not shooting the bull.
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Everett E. Bierman

PRESS RELATIONS — Everett E. Bierman has been appointed to a newly-created position of press relations manager effective Feb. 1, for Central Soya Co., Inc., Ft. Wayne, Ind. After he received a B.S. degree in agriculture from Purdue University in 1948, Mr. Bierman became an information specialist in the division of economic information, U.S. Department of Agriculture. In July, 1951, he became information officer for the National 4-H Club Foundation in Washington, D.C. Recently, he received an M.S. degree in communication, majoring in public relations, from the American University in Washington, D.C. He is a member of Agricultural Relations Council, American Agricultural Editors Assn., American Association of Agricultural College Editors, and Toastmasters International.

Red Meat Production Drops in November

WASHINGTON—Production of red meats in commercial slaughter plants during the month of November was down 6% from November, 1957, and down 15% from the October output, the U.S. Department of Agriculture announces.

Production totaled 1,969 million pounds during November. This includes slaughter in federally-inspected and other commercial slaughter plants but excludes farm slaughter.

November's production, added to the January-October production, gave a total for the first 11 months of 1958 of 22,209 million pounds, a drop of 5% below the corresponding period of 1957. Of the January-November total, 11,897 million pounds were beef, down 7%; 8,672 million pounds were pork, about the same as a year earlier; 1,024 million pounds were veal, down 24%, and 616 million pounds were lamb and mutton, down 4% from 1957.

JOINS COTTONSEED ASSN.

MEMPHIS, TENN. — Sterling International, San Francisco, has joined the National Cottonseed Products Assn., Inc., Memphis. Jordan Laboratories, Corpus Christi, Texas, has resigned from the association.

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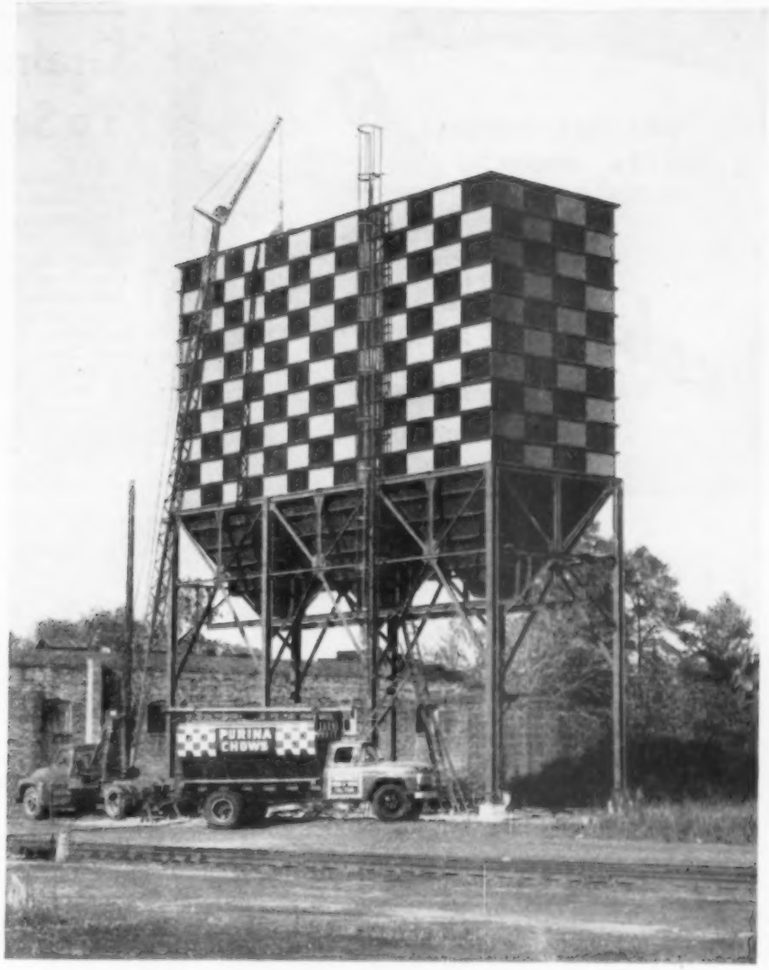
"Our firm put in Purina-designed bulk feed delivery service," says Mr. Ebrecht, "because it gives our customers Purina quality at lower cost. We'll have three bulk trucks and twelve 30-ton bins."



Ponchatoula Feed and Seed Store's bulk bins under construction.

Purina service center grows by building customer success

Like many another merchant whose service center is identified by the famous Purina Checkerboard, Ponchatoula Feed & Seed Store, Inc., Ponchatoula, Louisiana, has grown because its first objective is success for its customers.

"Good service is good selling," says Joe Ebrecht, president of the organization.

Ever since its opening day, 18 years ago, this service center has shown steady growth built upon a foundation of helping livestock and poultry feeders get profitable results. The firm has provided leadership for many in livestock and poultry raising.

This Purina service center in Ponchatoula is one of the town's fastest growing businesses.

Mr. Ebrecht discusses a customer call with Serviceman C. B. Johnson (right). Mr. Johnson is one of two outside sales and servicemen on the staff. He, like other employees, is more efficient because of Purina training.

"Purina literature is of great service to our customers who raise broilers, run dairies or keep breeding flocks or laying hens," comments Mr. Ebrecht to Purina Salesman Dan R. Durham. "In these booklets we find the kind of programs that pay off."

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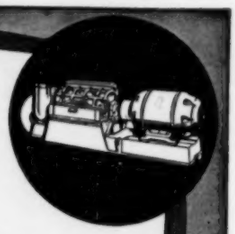

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Subsidy-in-Kind Programs:

Grain Trade Committee Points To Savings, Market Advantages

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—Members of the grain trade's nine-man committee, representing the main trade and marketing organizations in the U.S., have pointed out to the U.S. Department of Agriculture that the programs formulated by the committee, and adopted by the government, have, in effect, saved the Commodity Credit Corp. many millions of dollars. The committee met with USDA officials Jan. 9 and William F. Brooks, committee secretary and president of the National Grain Trade Council, has elaborated on the present situation resulting from the adoption of the payment-in-kind programs.

Such savings—the type which President Eisenhower called for in his State of the Union message—became available when the committee's proposal for payments of export subsidy in kind became operative. Thus the entire grain trade was thrown into the free market for its supplies for export and the influence of CCC stocks in the market place was minimized. Consistently, CCC stocks have been a price depressant.

Mr. Brooks said that the emergence of private trade buying had replaced CCC in the current market inventory holding position. The buying had provided a firm backlog of hedging of sales in the big futures contract markets, and had sealed off CCC stocks except in respect of subsidy-in-kind payments. This reflected an effort to give access to an orderly movement of CCC stocks from the surplus into the market without the stocks dominating the market place.

Mr. Brooks, as well as members of the committee, expressed high praise for the USDA officials who adopted the payment-in-kind program for exports, first for wheat and then for feed grains.

Not only has there been a real saving of taxpayers' dollars as the trade moved into the open market for supplies under the PIK program, but it has put dollars into farm producers' purses. Buying firmed farm prices for wheat and feed grains despite the over-all bearish connotations of supply conditions.

The operation of the PIK program does not appear to be clearly understood, even within the grain trade itself. There is a misconception that it is primarily an export promotion scheme without providing any advantages for the interior grain storage and merchandising trade.

Such a misunderstanding is unfortunate since the broad concept of the committee proposal was intended to turn back the marketing of grain to the private trade. And it so happened that the most practical way was to remove USDA from the export business.

The formation of the nine-man committee emerged from trade opinion which had been disturbed by the predatory attacks made by some marketmen on USDA officials. They denounced the officials for their failure to move directly and arbitrarily, through administrative action, to repeal the provisions of statutes which had been enacted by Congress.

Great credit must be accorded to such trade leaders as Carl C. Farrington, Archer-Daniels-Midland Co., who represents the National Grain Trade Council. Mr. Farrington, committee chairman, is joined by such men as Robert C. Woodworth, Cargill, Inc., representing the Terminal Elevator Grain Merchants Assn.; Julius Mayer, Continental Grain Co.—and his successor as Chicago Board of Trade appointee, Clarence Rowland, Engle & Co. — and Raymond J. Barnes, Tidewater Grain Co., representing the North American Grain Export Assn. For the interior merchandisers and grain traders on the committee is Ralph H. Hegman, Kellogg Commission Co., representing the Federation of Cash Grain Commis-

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It's safer to use because it minimizes fire and explosion hazards. Has no effect on the viability of seed grains. And leaves no odor, taste or poisonous residue.

Write today for complete details about Premium Brand Grain Fumigant "A". Also available is interesting information about other dependable, widely used Diamond herbicides and insecticides, such as 2,4-D, 2,4,5-T, DDT, BHC and Lindane.

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"If I were only 25 years younger..."

"Yes, don't we all wish it. But just think of the opportunity ahead for today's young folks. The way this country's growing and booming . . . all the new things being invented . . . the new jobs opening up . . . why, I'd give anything to be just starting out again!

"And you know where I think the *real* opportunity is? Right here—on this land, on this farm.

"Now, I'll grant that farming is going to require a man to stay on his toes like he never has before. Improvements are coming to farming, just like they are to everything. And it makes sense that farming methods will have to improve, too, if we're to do the job ahead on land already under cultivation.

"To be a good farmer, it'll mean a man will have to keep up with changes. New ideas. Better ways of doing things. And he'll have to be an even smarter business man than he is today.

"You know, I remember my dad telling me about my future in staying with this farm. He was sure right. Things have followed the same pattern since then that they will in the future. In some ways, farming's a lot easier now than it used to be. But in other ways, it's a much bigger challenge. That's why you just can't run a farm on any kind of "city hours". It's the *extra* time and work that enables you to make money in farming. I don't mind it, though. It's a great feeling to run your own business. And I wouldn't trade farming for any other life.

"I wonder about my boy. Roy's just 12 now . . . and he lives pretty much for the present. He's got good sense, though . . . makes a lot of his own decisions already. And I think once Roy grows up and gets serious about a career, he's going to like what he sees ahead for himself right here.

"For one thing, he will already have had about ten good years of farming experience. And then, when you consider how big the population will be when Roy's grown up . . . there's going to be millions of extra mouths to feed. Industry will be wanting more and more farm crops, too.

"Yes, I'd say if a young man is really looking ahead—and he prepares himself well, both with schooling and practical experience—he'll see the future in farming is well worth being in on.

"I'm counting on a share in it myself."

As people who have worked closely with the farmer for 93 years, we at Cargill agree: the future looks bright.

Our business is Creative Processing: helping change raw farm products into things people will need and buy. This is why we're confident—with a predicted U.S. population of 220 million by 1975 (and a world population of nearly 3 billion)—Cargill Creative Processing will be wanting an ever-increasing number of crops from you, your children and *their* children.

This helps your farming business keep in step with a growing and hungry America . . . makes our position as No. 2 man on the farmer-processor team more stimulating than ever before.

93 Years of Creative Processing of Farm Products

CARGILL

For free reprints, suitable for framing, write Cargill, Inc., 200 Grain Exchange, Minneapolis 15, Minnesota

Paul Hunter | William Foster | Marvin Hembree

DANNEN APPOINTMENTS—Dannen Mills, Inc., St. Joseph, Mo., recently announced the appointment of three men to territory representative jobs. The new representatives and their territories are: Paul Hunter, southeastern Nebraska; William Foster, southern Kansas, and Marvin Hembree, southwestern Missouri. They will be located at Beatrice, Wichita and Stockton, respectively. Mr. Hunter is a University of Missouri agricultural graduate. Mr. Hembree and Mr. Foster have both been in the feed business for a number of years.

sion Merchants. For years Mr. Hegman has spearheaded the fight for the cash commission merchants to regain a reasonable share of the marketing of grain within the monopoly held and maintained by CCC.

Representing the Kansas City Board of Trade on the committee is Warren Root of the Root Grain Co. E. B. Evans, Evans Grain Co., Decatur, Ill., appears for the Grain & Feed Dealers National Assn.—Dean Evans of the Evans Grain Co., Salina, Kansas, deputized for him at the Jan. 9 meeting — and Donald E. Fraser, Cereal Grading Co., represents the Minneapolis Grain Exchange. Ninth, but not least of the trade leaders, is Ray Hendrickson, National Federation of Grain Cooperatives.

The PIK program has been unique insofar as it has operated to the mutual advantage of the government and to all segments of the grain merchandising and storage industry. As the program diverted export business into interior markets, it provided activity for the interior warehousemen and merchandisers. It was a bold step forward to re-invigorate the interior trade into the competitive marketing of grain, a system which, because of its fierce competition has provided the farm producer with a better share of the market place dollar.

Mr. Brooks issued a formal statement which reflects the opinion of the committee.

The statement said:

"As a result of these programs, with all segments of the grain industry participating in the acquisition, movement and sale of grain for export, the government — specifically CCC—has realized sizeable savings of government funds. Under these programs all segments of the grain industry have been revitalized or at least been offered an opportunity of revitalizing themselves. During the past 12 months grain merchandisers at interior markets have, for the first time since 1946, had an opportunity to acquire grain at country points for resale for export without fear of government competition. Under these programs—at Salina, Kansas, for instance — corn acquired at country points from private merchants has been sold at the Salina Exchange for shipment out of the Salina market. At markets tributary to the Gulf waterway the competition for corn for resale to private exporters brought about an increase in the market price of corn.

"Under the subsidy-in-kind export program for wheat, 300 million bushels have moved into export with all segments of the grain industry participating in this movement. Under the subsidy-in-kind export program for coarse grains, initiated for corn in May, 1958, and for the remaining coarse grains on July 1, 1958, 200 million bushels of coarse grains have moved into export with all segments of the grain industry participating in this movement. In other words, all segments of the grain industry have, since the inception of these programs, participated in the movement into export of approximately one half billion bushels of grain, and this movement has been made at a savings to the government and of distinct benefit, pricewise, to producers in the marketplace. Under the government programs existing before, an equal amount of grain might have moved into export. This movement, however, would have been at added expense to the government—of little benefit to producers—and of no benefit to the highly competitive grain marketing system.

"An indication of the change which has occurred in the nature of grain movement can be seen by comparing lake shipments of grain from Duluth during the 1957 season with those during the 1958 season.

"The total lake movement of grain out of Duluth-Superior in both 1957 and 1958 approximated 100 million bushels. In both years the domestic milling firms moved about the same quantity and the same percentage of the total: 47% in 1957 and 48.3% in 1958. CCC shipments declined sharply in 1958 and accounted for only 3.4%, as compared with 27% in 1957. Other shippers, almost entirely exporters, sharply increased their shipments in 1958, accounting for 48.3%, as compared with 26% in 1957," Mr. Brooks concluded.

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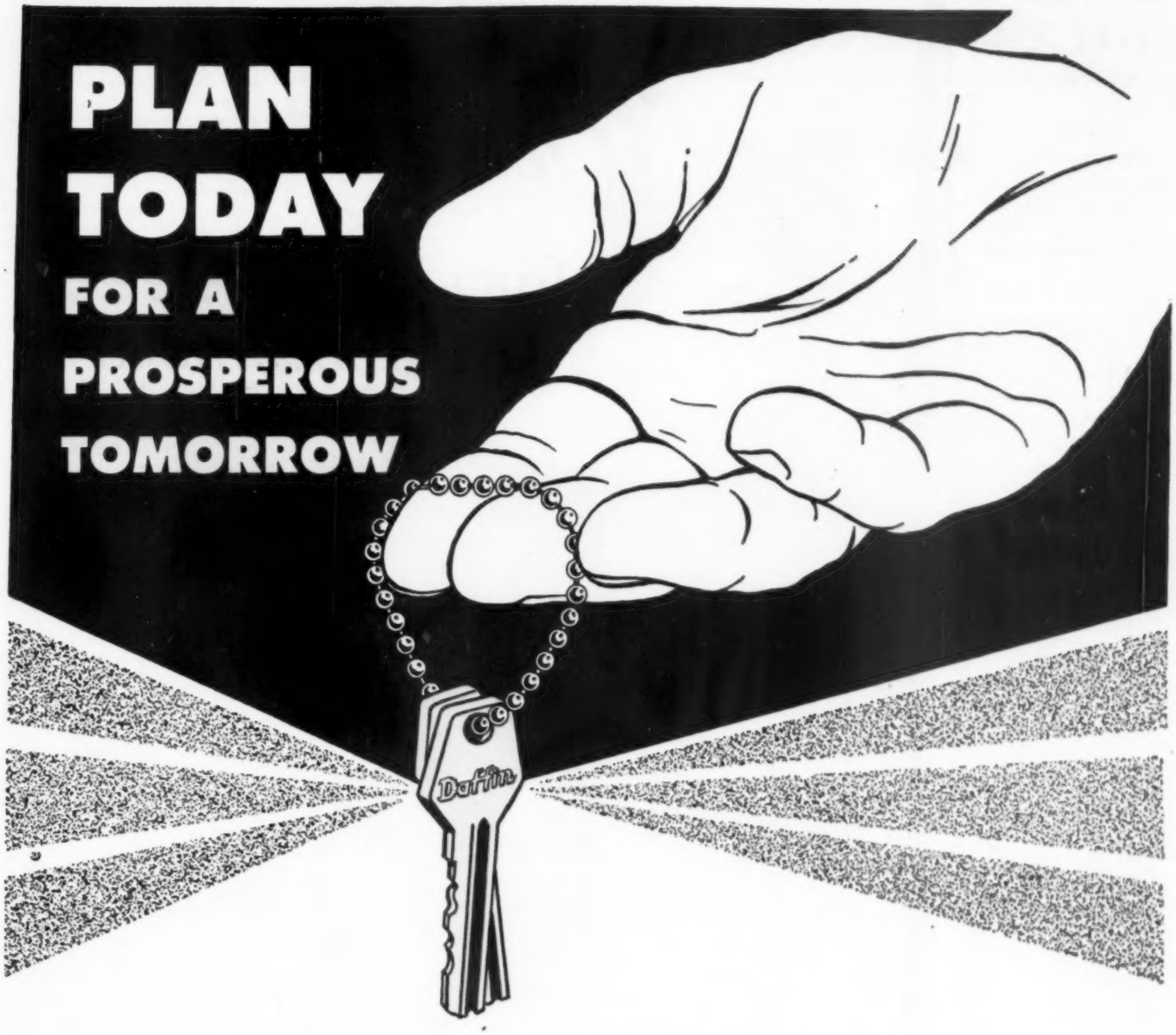

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GRAIN PRODUCTS DIVISION

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N. E. DAIRY OPERATION INCLUDES FEED MILL

DERBY LINE, VT.—Earl Hackett started dairying 41 years ago with a 16-cow farm and a $4,000 mortgage. Now, at 64, he has become the largest single milk producer in New England. Mr. Hackett has 1,384 cows that produce 40,000 lb. of milk a day on his dozen farms, which are scattered over 5,500 acres throughout Orleans County. His milk output brings in nearly a million dollars a year. Mr. Hackett's enterprise includes his own feed mill, where he produces his own feed, which includes alfalfa, dried molasses, bran, barley meal, ground oats, hominy and cereal waste.

H. B. Stoker, Jr., Named Grain Merchandiser

MINNEAPOLIS — Harry B. Stoker, Jr., has been transferred as a grain merchandiser to the new Alton, Ill., terminal facilities of Russell-Miller Milling Co., Minneapolis, announced William M. Steinke, president.

The firm, an affiliate of F. H. Peavey & Co., Minneapolis, is currently adding 1½ million bushels of terminal storage space adjacent to its existing milling plant. All previous storage had been entirely for the mill's operations. When completed on May 1, available capacity at the site, located on the Mississippi River above St. Louis, will be boosted to 3 million bushels.

Mr. Stoker has been a floor trader and merchandiser in the Van Dusen Harrington division of Peavey since 1957, when he joined the concern. Prior to that he was associated with Alastair Guthrie Vessel Brokers as assistant to the president.

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FEEDSTUFFS

Cattleman Says Ohio Law Ruined Business

CINCINNATI, OHIO — L. L. Brown, Jr., operator of a 110-year-old cattle firm at Cincinnati, says he has been forced out of business because of a new Ohio law which became effective Nov. 1.

The law provides for the importing of cattle into Ohio only from accredited herds and, Mr. Brown said, "there are so few accredited herds that I couldn't begin to buy a truckload. Since Nov. 1, I have not been able to buy even one cow from an accredited herd, and I can't stay in business when ordinarily I handle between 1,500 and 2,000 head a year."

Mr. Brown said owners of most certified herds are now keeping the cattle for their own use. Prior to enactment of the new law, he said, all cattle he bought had passed the TB and brucellosis tests, but were not necessarily from accredited herds.

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Rigid laboratory control ends trace-mineral worries

Lime Crest TRADE MARK BRAND

All Lime Crest trace-mineral pre-mixes, both standard and custom made, are under rigid laboratory control. That control begins with the ingredients and doesn't end until the final product has been checked.

Because of Lime Crest's complete laboratory control (both chemical and spectrographic methods are used) the feed manufacturer who uses Lime Crest trace-mineral pre-mixes need not worry that his feeds contain too little or too much of the trace minerals his nutritionist has specified.

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Made by LIMESTONE PRODUCTS CORPORATION OF AMERICA, NEWTON, NEW JERSEY
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JOE BROOKS

BY AL P. NELSON

Oswald Linden was a self educated farmer who had no more than an eighth grade education. However, he was a practical man and now owned, after 20 years of farming, a sizable farm, a good dairy herd, quite a few hogs and a flock of 1,000 chickens which his wife, Martha, raised.

But Oswald was the sort of fellow who did a lot of reading. He subscribed to five farm journals, took the county weekly and a church magazine. Nights he always read a half hour or so before falling asleep, and so was able to further his education over the years.

Every Farmer Could Use One Today

In fact, Oswald knew so much that his portly wife, who was one of the best cooks in the county, grew to respect him more year after year (which is something a lot of wives need coaching in if the divorce rate is to decrease).

Thus it was on a cold January evening after Ladies' Aid, Martha Linden said to Oswald, "Dear, what does integration mean?"

Oswald was so surprised he almost dropped the farm magazine he was reading. "What did you say?" he asked sharply.

"I said what does integration mean? At the Ladies' Aid this afternoon the women were all talking about how integration has come. And honestly, Oswald, I didn't even know what they were talking about."

Oswald smiled. "Well, dear," he said slowly, "those Ladies' Aid members were talking about a marketing condition which wraps up the growing and selling of chickens under one tight contract. You've heard me talk about that."

"Oh, is that what they meant?" said his wife. "Oh, I thought they meant something like that integration in the schools."

"Well," explained Oswald patiently, "integration is integration. The dictionary says it's to bring together all the parts of a thing. The word integration can be used for many things."

Mrs. Linden put her capable hands on her ample hips.

Womanlike, she said sarcastically, "Why, how silly! Sometimes I don't think men are so smart. Why don't they get an entirely different word for this chickens-to-market business?

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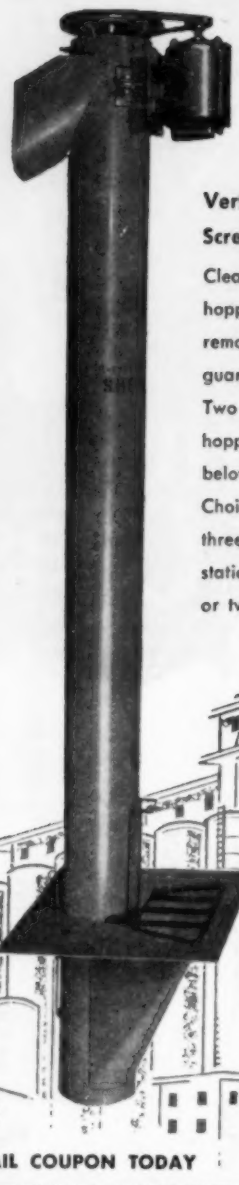

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VOTED 'MOST LIKELY' TO SACK SEED

SAN FRANCISCO—A graduating senior in the animal and poultry husbandry division of a northern California agricultural college was voted "the boy most likely to sack seed."

The people would understand it better."

Oswald looked surprised. "Do you think so?" he said as if the idea were new to him.

Farm Dictionary

"Why certainly, Oswald. Honestly, I don't see how you can read those farm magazines like you do. I don't understand them any more. They've got words I don't know, and they aren't in the dictionary we won as a prize in the egg contest at the fair 10 years ago. Oswald, what this county needs is a good farm dictionary explaining all those new words like tranquilizers, unidentified factors or whatever it is and a lot of others."

Now Oswald did drop his farm magazine. "A farm dictionary!" He sat staring into space for a moment, with his eyes holding a far away look.

"Well," said his wife, finally, wiping the last pan in the sink, "don't you think so?"

"Gosh, I don't know," said Oswald. "I read the farm magazines so much I know the meaning of all those new words—or most of them."

"Well, I don't, and lots of others don't either. We were talking about it at Ladies' Aid. Lots of women are just as confused as I am."

Oswald began to smile. "Martha, you may not do as much reading as I do, my dear, but you have the uncanny knack of saying the right thing at the right time. In other words, you cut right to the heart of things. You don't beat around the bush."

His wife smiled. She was not quite certain of the entire content of her husband's meaning, but she could see that he was very pleased with her, and that satisfied her.

"Well, if that's the way you feel, I'll just bake another gooseberry pie for you tomorrow, Oswald," she said gently. "I know you like them."

Oswald tapped the table lightly. "I'll just bet I can sell that idea to someone," he said.

"Sell what?" asked his wife, who in addition to being forthright was also curious.

"The idea of a farm dictionary."

"Sell that idea? Who would want it?"

Tell Joe About It

Oswald smiled. "I know one man who sells to farmers who would jump at the idea, I think. His name is Joe Brooks."

His wife was really surprised. "But why would he buy that? He could do that without buying the idea from us."

"Sure, he could," smiled her husband. "Except for one thing. He hasn't got the idea yet—and we have. It's our job to sell him on it."

"Will he pay for it?"

"I think he will," said her husband, now a little excited. "Because if he starts publishing a farm dictionary no other feed dealer will dare do the same—it would make the others copycats, and who wants to be a copycat? I'll just go in and say to Joe, 'I've got an idea that I think will bring you lots of publicity, create much good will and will be worth its weight in new customers and extra business. If I tell you about it and you use it, I want free grinding for six months—or a half ton of feed free'."

"A half ton of feed?" gasped his wife. "Oswald, are you sure you are feeling right?"

"Never felt better in my life," said her husband. "In fact, I am going to drive into town tonight and go right to Joe's home and talk to him. He can publish a page or so of these new farm terms—with definitions or explanations—in his monthly bulletins. Farmers will study and save those pages. And when Joe runs out of new words, he can have a small book mimeographed or printed and call it 'Joe's Farm Dictionary'."

"But are there enough words he can put into it?" asked his wife.

Her husband laughed. "He's got at least 50 new ones in feeding alone—hay wafers, pelleting, tranquilizers, balanced feeds, crumbles, and many others. Then there is stilbestrol, gibberellic acid, herringbone parlors, torque converters, automatic irrigation, sexed chicks, hybrid corn and many others. All the words won't be puzzles to farmers, but quite a number will. I'll bet Joe's dictionary will come up with 500 words specially used in agriculture. And that will be just a starter. Joe can add pages every year. Wish me luck, dear. When I come home I hope I'll have Joe's promise of a half ton of feed."

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FIELD REPORT

TO: B.D.

RE: New Bag Design for [redacted]

Brought the new multiwall design to their PA, Mr. [redacted] today. He was so pleased with it that he took it right up to Mr. [redacted], their president, who was tickled with it. He especially liked the idea of simplifying the design, thus reducing his costs. At the same time, he agreed that we had greatly improved appearance, strengthened identification, and brought out his true selling points in much better way. He now considers the bag an "ace salesman", and praised the PA for getting such a fine design at no cost to his company.

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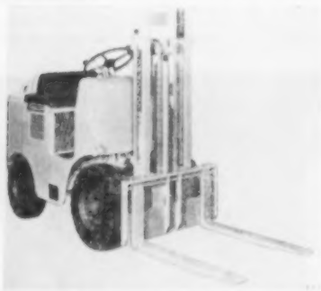
No. 7351—Fork Lift Truck

A diesel-powered fork lift truck designed for extra safety in areas and industries where additional safety is needed has been introduced by Towmotor Corp. Designated the Towmotor Safeguard Diesel Fork Lift Truck,



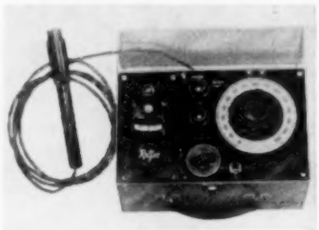
the unit is available in nine models with lifting capacities ranging from 3,000 to 12,000 lb. The truck is completely devoid of electrical components, the company said. For further information about this product, check No. 7351 on the coupon and mail.

No. 7350—Breeder Cockerel

A White Cornish Breeder Cockerel has been announced by the Jeff D. Brown Co. According to company literature, nine years of research and breeding studies plus a year of field testing went into the new breeding cockerel. The Ledbrest cockerel is dominant white and in field tests had an average hatch of 84.6% with an average saleable chick record of 82.7%, the company said. Advantages of the new cockerel, according to the company, are ability to withstand stresses, walnut comb which is low on the head and a better feed conversion. Check No. 7350 on the coupon and mail to this publication for details.

No. 2086—Temperature Monitoring

Development of a temperature monitoring system for grain bins is announced by the Rolfes Grain Aeration Companies. Rolfes said the new device gives the operator a complete picture of every square inch of his storage area and flashes an immediate warning whenever danger is present to make quick protective action possible. The heart of the new system is a series of thermocouples located at 3-5 or 6 ft. intervals in a special nylon-encased cable. When the cable is suspended from the bin top or building's roof, these precision thermocouples measure the temperature of the grain at specific depth levels. Temperature readings are taken by plugging in the Rolfes portable reading instrument at the special outlet built into the top of every cable. It reads the temperature at each thermocouple individually in a matter of seconds and is then taken to the next cable, where the process is quickly repeated. If desired, all cable outlets may be wired to a central monitoring station, where all readings can be taken in one convenient location, such as at one end of a building in the case of flat storage structures. For more information check No. 2086 on the coupon.



No. 7352—Data Sheet On Rail Car

General American Transportation Corp. announces the availability of an information sheet on its new line of Dry-Flo covered hopper cars. Included are capacities, loading and unloading information, anti-contamination facts and specifications. The sheet also contains photos, illustrations and diagrams. For copies of this information sheet, check No. 7352 on the coupon and mail to this publication.

No. 7354—Mastitis Treatment

A new Terramycin liquid formula is being introduced by Chas. Pfizer & Co. to provide a treatment for mastitis within a single milking period, company literature said. The preparation, in uniform dosage form, will not settle out or freeze, has high stability and contains self-sterilizing and non-irritating properties, the company said. High solubility, the literature said, gives an average antibiotic concentration of more than 600 micrograms per cc. of milk. For more details, check No. 7354 on the coupon and mail.

No. 7347—Feed Analysis Table

The Nopco Chemical Co. has published a revised edition of its "Feed Ingredient Analysis Table." The table is published annually and lists the nutritive content of 71 common feed ingredients. It is intended as a basis for quick computation of a mill's feed formulas, company literature said. The company has included this year a section on metabolizable energy values for poultry in addition to the usual energy values. Copies can be obtained by checking No. 7347 on the coupon and mailing to this publication.

No. 7349—Bulletin on Roller Mills

The availability of a four-page illustrated technical bulletin describing one, two, three pair high and double roller mills has been announced by Sprout, Waldron & Co., Inc. Bulletin 153-A also describes the function and operation of roller mills and explains construction and design details. Specification tables are included giving length, width, height, roll speeds, horsepower range and shipping weights. For copies of this bulletin, check No. 7349 on the coupon and mail to this publication.

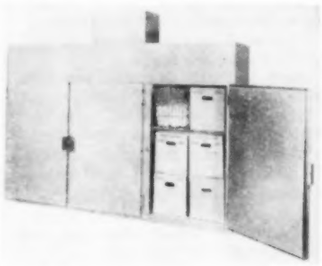
No. 7353—Moisture Balance

A moisture balance for determinations of moisture content in a wide variety of materials has been announced by Central Scientific Co. Principal feature of the new model, according to company literature, is a built-in autotransformer which regu-

lates voltage automatically. Among materials for which the balance can be used are corn products, soybean products, fertilizer and plant seeds. For more information about this product, check No. 7353 on the coupon and mail to this publication.

No. 7348—Steel Egg Cooler

Sunset Equipment Co. has introduced an egg cooler designed for producers, hatcheries or egg processors. The coolers are available in six case, 12 case and 18 case packaged units and in larger walk-in models. The cooler is made of heavy gauge steel and the outside is finished in gray hammertone enamel. Latches and hinges are finished in chrome. High density fiberglass insulation and



inside temperature at approximately thermostatic controls maintain the 55° F., the company says. Humidity ranges from 80 to 90%. For details, check No. 7348 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 7274 — Dryer control panel, Campbell Dryer Co.

No. 7275—Booklet on fats in feeds, Monsanto Chemical Co.

No. 7276—Automatic feed weigher, Seedburo Equipment Co.

No. 7277—Poultry feed brochure, Mechanical Poultry Feeder Assn.

No. 7278—Report on bulk handling, Towmotor Corp.

No. 7279 — Metal-free slat floor, Munro Egg Automation Co.

No. 7280 — Bulk storage-mixing tank, Columbian Steel Tank Co.

No. 7281—Bin level indicator, Roto-Indicator.

No. 7282—Antibiotic technical bulletin, Merck & Co., Inc.

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- ☐ No. 7350—Breeder Cockerel
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To give your turkey starter feeds extra qualities for faster gains on *less feed per pound of live weight*, blend POLYSTAT (4 lb. per ton) in all mash rations. POLYSTAT promotes sound development, helps protect poults from coccidiosis, large roundworms, tapeworms, bluecomb, hexamitiasis, subclinical disease. More turkeys live and get a sturdier start with POLYSTAT.

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No. 7330—Flock replacement folder, Agricultural Extension Service, University of Georgia, College of Agriculture, Athens, Ga.

No. 7331—Bulk handling system, Ranger Equipment Co.

No. 7332—Batching systems brochure, Toledo Scale, Division of Toledo Scale Corp.

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No. 7339 — Automatic bag closer, Dave Fischbein Co.

No. 7340 — Leghorn nest, Keenco Farm Equipment Co.

No. 7341—Knife cutter data sheet, Sprout, Waldron & Co.

No. 7342—Folder on magnetic separators, Jacobson Machine Works, Inc.

No. 7343 — Rotary paddle feeder, Richardson Scale Co.

No. 7344—Coccidiosis control booklet, Dorn & Mitchell Laboratories, Inc.

No. 7345—Drug proportioner, Vineland Poultry Laboratories.

No. 7346 — Booklet on materials handling, Tote System, Inc.

More Research Funds Asked in Georgia

ATHENS, GA.—The seven-member education and research committee of the Georgia Poultry Federation attended the January meeting of the University of Georgia's board of regents and appealed for funds for poultry research in the state. The committee was led by A. A. Fowler, Douglasville, Ga., president of the federation.

In response to the appeal the regents asked the federation to work with Dr. Clyde Driggers, chairman of the university's poultry division, in setting out a report of what is needed for a full-scale research program. The federation representatives agreed to have the list ready for the regents' education committee at the meeting in February.

In listing the need for a long-range program of funds for poultry research, the federation committee pointed out that poultry amounts to more than $198 million of income annually in Georgia (the state is first in the U.S. in broiler production), or 31.4% of the state's annual cash income, and that only 11.1% of funds allocated for research in the state goes into poultry research.

Members of the federation committee, besides Mr. Fowler, were: Joe Tankersley, Gainesville (chairman); Julius Bishop, Athens; Hulan Hall, Duluth; Charles Dannals, Athens, and Al Gibson, executive secretary of the federation.

Meanwhile, George H. King, director of the university's experiment station, assured the federation that funds to fill current operations deficit in the poultry division will be made available, but not during the current fiscal year. Included in the special request were funds for maintenance and equipment.

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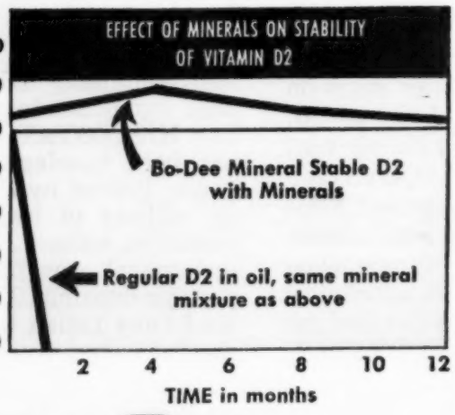

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Potential Layers Up 3%

WASHINGTON — The basis for lower egg prices compared with a year ago is seen in the U.S. Department of Agriculture's latest report on numbers of layers and egg production.

The number of potential layers on farms on Jan. 1 was up 3% from a year earlier, and the rate of production per layer was at a new high for this time of year. Farm flocks laid 5,257 million eggs during December—4% more than a year earlier and a record high total for the month.

Potential layers (hens and pullets of laying age plus pullets not of laying age) on farms Jan. 1 totaled 361,445,000—3% above a year earlier. All regions of the country showed increases except the north Atlantic states, where numbers were down 2%.

With a late hatch in 1958, pullets not yet of laying age accounted for a significant part of the increase in potential layers as of Jan. 1.

The number of layers on Jan. 1 totaled 325,529,000—up 1% from a year earlier. Pullets not of laying age on Jan. 1 totaled 35,916,000—representing a 15% increase over a year earlier.

During December, laying flocks averaged 324,913,000 layers, or 1% more than a year earlier. While the number of birds was up only 1%, egg production, as noted above, showed a 4% increase. This was because the rate of production per layer during December was 16.2—3% more than the average in December, 1957. This was a record high for the month. The rate of lay was above a year earlier in all regions.

Prices received by producers for eggs in mid-December averaged 36.3¢ doz.—down about 8¢ from a year earlier. The average cost of the farm poultry ration in mid-December was $3.85 cwt., up 6¢ from a month earlier and up 3¢ from a year earlier.

Hens and Pullets of Laying Age, Pullets Not of Laying Age, Potential Layers and Eggs Laid per 100 Layers on Farms, Jan. 1

Year—	North Atlantic	E. North Central	W. North Central	South Atlantic	South Central	Western	United States
Hens and Pullets of Laying Age on Farms (thousands)							
1948-57 (average)	59,220	70,429	100,325	34,215	57,455	37,394	359,037
1958	55,814	62,714	87,123	33,647	44,620	36,977	320,895
1959	53,862	64,580	87,908	35,083	45,857	38,239	325,529
Pullets Not of Laying Age on Farms (thousands)							
1948-57 (average)	3,800	3,630	5,773	5,003	7,260	3,393	28,860
1958	5,330	3,010	5,479	5,736	6,104	5,552	31,211
1959	5,812	4,086	6,775	6,117	6,734	6,392	35,916
Potential Layers on Farms* (thousands)							
1948-57 (average)	63,020	74,059	106,098	39,218	64,715	40,787	387,897
1958	61,144	65,724	92,602	39,383	50,724	42,529	352,106
1959	59,674	68,666	94,683	41,200	52,591	44,631	361,445
Eggs Laid Per 100 Layers on Farms (number)							
1948-57 (average)	50.3	47.7	46.1	37.8	31.5	47.9	44.2
1958	54.9	54.8	55.8	46.9	39.9	57.0	52.4
1959	54.3	54.9	55.3	48.2	39.6	57.6	52.4

*Hens and pullets of laying age plus pullets not of laying age.

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Aids in Control of MASTITIS

Aids in Reduction of SCOURS

Aids in Prevention or Treatment of FOOT ROT

Aids in Reduction of RESPIRATORY INFECTIONS

Results of tests using BINGMAN'S P-17

During this test period herds were fed BINGMAN'S P-17 at low level.*

	FIRST TEST			SECOND TEST (in 60 days*)			
Herds Tested	Quarters Tested	Clear	Infd.	Quarters Tested	Clear	Infd.	Percent Cleared
A.	32	21	11	28	28	0	100%
B.	95	76	19	112	108	4	79%
C.	80	34	46	68	55	13	72%
D.	68	52	16	68	64	4	76%
E.	74	38	36	79	72	7	81%
F.	83	69	14	78	76	2	85%
G.	60	34	26	44	39	5	81%
H.	36	27	9	28	26	2	77%
I.	16	11	5	16	15	1	80%
J.	32	16	16	28	25	3	81%
K.	48	41	7	60	59	1	86%
	624	419	205	609	567	42	79.5%

INDICATION OF SEVERITY OF INFECTION

Degree	1st Test	2nd Test
Slight	94	30
Infected (Mastitis)	66	9
Chronic (Mastitis)	45	3
Total	205	42

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Jay Bee's air conveyor—white arrows in illustration—adds another service to the All-in-One Feedmaker's high volume, low-cost grinding, mixing, and blending operation.

Now you can pipe processed feeds directly from the mixer to storage bins, feeders, hoppers—overhead or ground level—at distances up to 30 or 40 feet. Flexible 4-inch tubing can be easily joined in any number of lengths. Powerful air delivery puts the feed right where it is needed—instantly, without waste. The whole operation is quick, clean, efficient—giving your customer better, faster service—making less work for your operator.

● And remember—the Jay Bee All-in-One Feedmaker gives the same fine "textured grind" all Jay Bees deliver: horsepower for horsepower, screen for screen, Jay Bee hammermills are unexcelled for their consistently uniform texture of grind.

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USDA Reports 7% Increase In Lambs on Feed Jan. 1

WASHINGTON — The number of sheep and lambs on feed for market on Jan. 1, 1959, was 7% more than a year earlier, according to the Crop Reporting Board, Agricultural Marketing Service, U.S. Department of Agriculture.

The number is estimated at 4,280,000 head. This is 270,000 more than a year earlier, but slightly less than the 4,302,000 on feed on Jan. 1, 1957.

The USDA report stated that weather conditions to Jan. 1, 1959, over the country as a whole were generally favorable for lamb feeding, that feed supplies are abundant in all important lamb feeding areas except in limited localities, and that gains have been good and lambs are being marketed at heavier weights than usual.

"Wheat prospects in the Central Plains area were excellent early in the season, and the number of sheep and lambs brought in was up substantially from a year earlier. The fall was dry, however, and pasture growth did not come up to earlier expectations," it was pointed out in the report.

"The average price of choice feeder lambs at Denver reached a peak of $23.75 cwt. in late September and early October, but declined rather sharply during the latter part of December, averaging $18.38 for the week ending Dec. 27, 1958."

Corn Belt Up 6%

In the North Central states the 2,620,000 sheep and lambs on feed were 6% more than the 2,461,000 on feed Jan. 1, 1958, and the largest number for this area since Jan. 1, 1953.

Most of the increase in this area results from a 69% increase in Kansas, with wheat pasture operations more than double those of a year earlier. Other increases were Wisconsin, 12%; Ohio, 10%; Missouri, 10%; Minnesota, 5%; South Dakota, 3%, and Iowa, 1%.

The number on feed was the same as a year earlier in Illinois and Michigan, while declines ranging from 4 to 25% were recorded in Nebraska, North Dakota and Indiana.

July-November, 1958, shipments of feeder sheep and lambs into nine of the Corn Belt states for which data are available were 30,017 head — about 2%—more than for the same period of 1957.

Western States Up 10%

Sheep and lambs on feed in the 11 Western states totaled 1,413,000 head —10% more than the 1,290,000 head on feed a year earlier.

In Colorado, the leading feeding state, the 527,000 head on feed Jan. 1 this year was 5% more than the 504,000 head on feed a year earlier. All of the increase was in the northern area of the state, with an estimated 380,000 on feed, as compared with 340,000 head in 1958.

The Arkansas Valley in Colorado showed 15,000 less lambs on feed this year, with the estimated number at 125,000 for 1959, and 140,000 for 1958.

Lamb feeding in the North Platte Valley of Nebraska and Wyoming was 7% less than a year earlier, with the 1959 number estimated at 180,000, as compared with 194,000 in 1958.

In California, the number of sheep and lambs on feed at 293,000 head was 17% more than the 250,000 head on feed on Jan. 1, 1958.

Elsewhere in the West, large increases were shown in Idaho, New Mexico and Utah. The number on feed was the same as a year earlier in Montana, Wyoming and Nevada, with decreases occurring in Arizona, Washington and Oregon.

Benton C. Rain

SALES MANAGER—Benton C. Rain has been named sales manager of the citrus feed division of Tropicana Products, Inc. He will be located at Tropicana's general offices in Bradenton, Fla. The firm markets Tropicana citrus pulp cattle feed processed from waste orange rind. Mr. Rain is a graduate of the University of Georgia. He held a part-time job with a feed brokerage firm while in school and later joined the company on a full-time basis. He was with Cocke & Co., Atlanta brokerage and jobbing firm, before joining Tropicana.

Cincinnati Board of Trade Elects Officers

CINCINNATI—Officials and directors of the Cincinnati Board of Trade were reelected at the annual meeting held recently. Directors named for three-year terms are Robert Lee Early, Early & Daniel Co.; William Fedders, J. H. Fedders, Inc.; Elmer H. Heille, Cincinnati Grain & Hay Co.; Henry Nagel, Henry Nagel & Sons, and R. B. Williams, Procter & Gamble Co.

Officers for the coming year are E. P. Henderson, Schenley Distillers, Inc., president; Mr. Early, first vice president; Mr. Heille, second vice president; Raymond Fledderman, Archer-Daniels-Midland Co., secretary, and Donald Speake, Cooperative Mills, Inc., treasurer. Roy E. Rife, Bache & Co., was reappointed general manager.

FEED MILL BURNS

EDDYVILLE, IOWA — Extensive damage was done to the Orville Maloy Feed Mill here when fire broke out in the office during the night recently. Records of the firm were saved.

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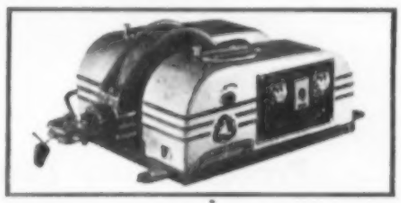
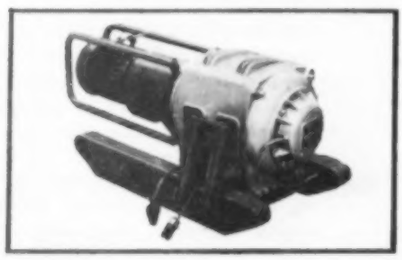
DALLI – Popular standard model. Output – 30 tons of soft feed per hour. Generates a pull up to 1400 pounds. Powered by a 2.5 HP electric motor (220-440 volts) or 5 HP gasoline engine. It weighs 480 lbs.



BULLY – Extra power for heavier jobs and increased efficiency. Output – 40 tons of soft feed per hour. Generates a pull of 2400 pounds. Powered by a 3.5 HP electric motor (220-440 volts) or 8 HP gasoline engine. It weighs 870 lbs.



MOBY – A duplex unit, basically the same as the BULLY model. Output – 80 tons of soft feed per hour. Operates two scoops, each independently controlled by push-button switch. It weighs 946 lbs.

TOP SALES JOB FOR HERMITAGE—Chester Martin (right) is receiving congratulations from T. M. Tyner, sales manager for Hermitage Feed Mills, Nashville, Tenn., for selling over 500 tons of a new 54% protein concentrate in a 60-day period. The new concentrate, which utilizes urea to achieve its high protein content, is sold largely to custom mixers and local mills for mixing into dairy and beef cattle feeds. "Sales of the new concentrate have far exceeded our expectations and have been mainly new business," said Lehman Keith, manager of Hermitage. "We also increased our 32% and 44% concentrate tonnage over previous year's volume," he said. Mr. Keith predicted increasing acceptance of concentrates such as this in which urea is used.

Dairy Products Supply-Demand Ratio to Near Balance in '59

AMES, IOWA—The supply of dairy products in 1959 will be more nearly in balance with consumer demand at prevailing support levels than at any time in the past six years, according to Francis Kutish, Iowa State College farm economist.

But, he said, dairy supplies will still outrun what the market will take at support prices. This makes the government support program an important factor in the dairy outlook for the coming year.

Prices to farmers for manufacturing milk and butterfat are being supported at 75% of parity. The parity index has been essentially stable since last spring. If it continues to be stable, the support level for 1959 will be near that of this past year.

Total milk output probably will show only a small increase in 1959, said Prof. Kutish. But, he said, increases in later years probably will be larger as feed grain supplies continue to be large and as the hog and beef enterprises lose some of the attractiveness they had in 1958.

Dairy cattle numbers have been going downward for nearly 15 years —except for a slight upturn in 1953. Production per cow, on the other hand, has continued to move upward. Prospects for 1959 indicate a further reduction in the number of cows and a continued uptrend in milk production per cow.

The decline in number of milk cows may not be as great in 1959 as it was last year, since the biggest effect of the sharp price rise in meat animal prices has already played its role in the dairy picture, said Prof. Kutish.

James W. Moyers

BEACON APPOINTMENT—The appointment of James W. Moyers to be responsible for all operations of the Beacon Milling Co. on the Delmarva Peninsula, was announced by Stanley W. Tyler, president of the Beacon division of Spencer Kellogg & Sons, Inc. Mr. Moyers has experience in the feed and poultry business, having been president of the M. C. Showalter Co., Broadway, Va. Beacon acquired that concern in 1956, and Mr. Moyers has continued in the capacity of president since that time. He is currently president of the Virginia State Poultry Federation, is former president of the Virginia State Feed Assn. and the Virginia Turkey Federation.

Seen as Top Broiler Processing Center

FOREST, MISS.—This community may soon have the distinction of processing more broilers weekly than any other city in the U.S.

Ray Fechtel, owner of Southeastern Hatcheries of Atlanta, which has extensive poultry operations in several southern states, announced recently that he selected Forest as the location for a new processing plant which could handle 500,000 broilers a week.

This would increase the number of broilers processed here to about 875,000 a week. The Cudahy Packing Co. plant, built several years ago under Mississippi's "Balance Agriculture with Industry" program, and the Gaddis Packing Co. plant each handle some 125,000 birds a week. A third plant, the locally financed Forest Packing Co., is scheduled to start operations soon with a capacity of 125,000.

City officials of Forest said agreement had been reached on all phases of a contract between the city and Southeastern Hatcheries. A contract is being drawn, and application will be made to the Agricultural and Industrial Board for a certificate authorizing a $500,000 bond issue election to construct the building. If the bond issue is approved, the plant building will go ahead.

In addition to extensive farms and hatcheries, Mr. Fechtel has a processing plant at Cullman, Ala., which handles 200,000 birds a week. The Forest operation would be his second processing plant.

CHAMPION

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Process More Tonnage . . . At Lower Cost Per Ton

LARGER CAPACITY Champion's large, 2- to 3-ton mixing capacity, with fast and accurate grinding action, will process a high tonnage of top-quality feeds at a lower cost per ton than units of smaller volume.

LABOR-SAVING FEATURES More than two tons of bagged concentrates can be hauled on the large platform next to the mixer, thus saving extra truck and man-hour expense. And with Champion's new sheller arrangement, ear corn and grain are conveniently fed by the same feeder which feeds the hammermill unit—saving the expense of an auxiliary feeder. A simple control valve in the feeder-head diverts the ear corn into the sheller or into the mill unit as desired.

DEPENDABLE PERFORMANCE Champions are built to provide dependable, faster and more complete, on-the-farm service—day after day. You're assured more for your money, too, because Champion leadership, with more than 29 years' manufacturing experience, brings you this quality-built unit at the industry's most fair and honest price.

CHAMPIONS ARE BUILT TO BUILD YOUR BUSINESS—with larger capacity, labor-saving features, and dependable performance. Write for Bulletin 823 today.

CHAMPION PORTABLE MILL CO.
2109 COMO AVE. SOUTHEAST • MINNEAPOLIS 14, MINNESOTA

Cooperative Buys Processing Plant

ATHENS, GA.—The Cotton Producers Assn. has obtained joint operating control of the large Athens broiler processing plant of Colonial Poultry Co., Inc. Considerations involved were not reported.

The transaction was announced by Doyle W. Terry, Colonial founder and president, and confirmed by D. W. Brooks, Atlanta, general cooperative manager.

Mr. Brooks said association members had provided a good portion of the poultry processed at the plant for the past several years, and he added that he expects members to profit by the new plan. The plant will be operated under same management with no change in personnel, the announcement said.

The cooperative has other poultry processing plants in Canton, Ga., and Boaz, Ala., and also has large facilities in the South for handling grains, feeds, fertilizer and other products.

Supplemental Feeding Necessary in Montana

HELENA, MONT.—Wintry weather has forced supplemental feeding for 80% of range cattle in Montana, according to the state-federal survey. In eastern Montana, where the heaviest hay lifts were under way, ranchers reported that cattle suffered great shrinkage in weights from the recent severe weather.

In the western half, shrinkage was about average or less. The general condition of cattle and sheep was reported to be good in all areas except in some northeastern counties, where livestock were in fair to good shape.

Hay makes up the bulk of the supplemental feed. In eastern Montana, considerable quantities of cake, concentrates or grain are being fed.

The amount of hay available for sale was more than normal in some western and southern counties. Little was available for market in the northeastern corner. Elsewhere, about the usual quantities are available.

G. Chester Bell Retires From Wirthmore Firm

GREENFIELD, MASS. — G. Chester Bell, who has completed 25 years as assistant general manager for Wirthmore Feeds, Inc., Waltham, Mass., at its regional office in Greenfield, has retired.

He joined the Wirthmore staff at Norwich, Conn., in 1913, leaving the company only long enough to serve in the military forces during World War I.

In 1928 Mr. Bell became district store supervisor in the Framingham, Mass., area. Two years later he was transferred to Greenfield, where in 1933 he assumed the title and duties of assistant general manager.

Associates in the Wirthmore organization, neighbors and townspeople joined in giving Mr. Bell a party to celebrate his retirement.

Dr. B. W. Fairbanks Announces Retirement

CHICAGO—Dr. B. W. Fairbanks recently retired from his position as head of the American Dry Milk Institute, Inc., Chicago, a job he has held for the past 10 years.

Dr. Fairbanks joined the institute in 1945 as head of scientific development, in which capacity he was directly responsible for all institute research and technical development activities, as well as the organization's laboratory.

He succeeded Roud McCann in 1949 as executive officer and director of the institute. Before joining the institute in 1945, he was head of swine husbandry at the University of Illinois.

Dr. Fairbanks plans to move to Corvallis, Ore., where he will do research and writing on dry milks, and also pursue several hobbies.

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MIXES DRY MATERIALS:
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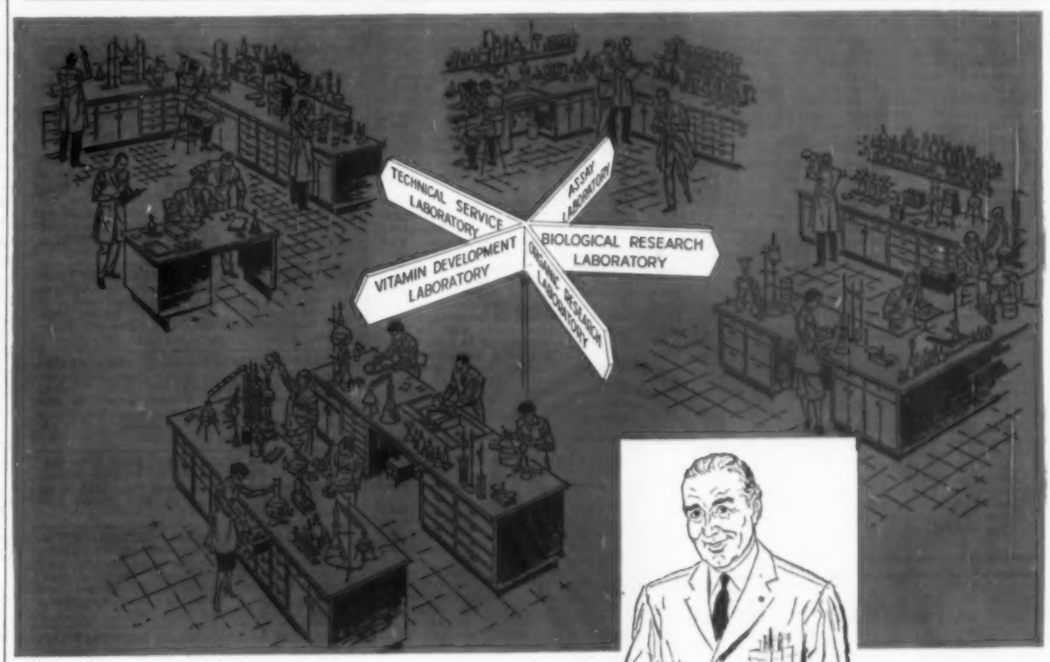

May we help you?

This may be a good time to remind you that Nopco-Paks are custom-formulated and custom-blended individually for you.

Nopco-Paks are skillfully blended high-quality ingredients including the superior Micratized® Vitamins A and D, formulated to your specifications.

Nopco-Paks are formulated by qualified nutritionists in Nopco's Technical Service Bureau. The bureau's efforts are actively supported by Nopco's Technical Service Laboratory, Vitamin Development Laboratory, Biological Research Laboratory, Organic Research Laboratory, and Assay Laboratory.

With this accumulation of nutritional know-how behind us, we do not have to make exaggerated claims for Nopco-Paks. Rather, we prefer to say: "May we help you work toward the ideal premixes for you—nutritionally and economically?"

Discuss the whole matter with your Nopco representative or write us direct.

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☆ Classified Ads ☆

Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. In figuring cost of your classified ad . . . each word, abbreviation, telephone exchange and number, set of initials, or group of figures counts as a word. To the number of words in your want ad itself add six (6) words for your name and address or name and address of your firm. This applies for both direct-reply ads and for blind ads containing a box number. If an ad is keyed, care of Feedstuffs, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $12.00 per column inch. No discount on ads ordered for more than one insertion.
All Want Ads cash with order.

HELP WANTED

DISTRICT SALES MANAGER — WILLING to change sales of building products. Zell-Aire Corporation, Reading, Pa.

SALES MANAGER FOR CENTRAL STATES feed manufacturer. Opportunity for growth with company. Address Ad No. 4423, Feedstuffs, Minneapolis 40, Minn.

COMMISSION SALESMEN — REPRESENT distributor of veterinary, drug, poultry and pet supplies. Standard Pharmaceutical Supply, 307 North Martel, Los Angeles 36, Cal.

EXPERIENCED FEED SALESMAN WANTed for proven area central Illinois. We have a man retiring and need a replacement. The territory is well established and company well known. Earnings are excellent. Address Ad No. 4451, Feedstuffs, Minneapolis 40, Minn.

CENTRAL OHIO GRAIN, FEED, SEED, farm supply company wants experienced salesman. Must be able to buy from as well as sell to farmers. Former resale experience would be helpful. 27-year-old company, privately owned. Supply photo, experience and details covering yourself. Russells, Hilliards, Ohio.

IS YOUR INCOME LIMITED BECAUSE OF too many superiors ahead of you? Or, does your present job limit you using all your selling and promotional talents and ambitions? If you want to remove both obstacles with no ceilings to hold you back, investigate this opportune job. Part ownership necessary. You must know poultry and poultry management. Give all details as to age, selling experience, past success. Write Ad No. 4455, Feedstuffs, Minneapolis 40, Minn. Inquiries will be kept confidential.

SALESMAN
FEED — SEED

Man 28 to 38 with Purina or similar merchandising and selling experience to call on established and new dealers north of Des Moines, Iowa, for leading farm seed firm. Seed experience not necessary. This is an outstanding opportunity for high grade merchandising man with ambition. L. Teweles Seed Co., Milwaukee 1, Wis.

Feed Additive
Regional Representation

Large nationally known corporation will employ man for sales and technical service work. Will supervise distributor salesmen working with feed manufacturers.

Qualified applicant must be graduate in animal nutrition or related science and have at least five years' experience in the feed industry in either sales, feed formulation, or field work.

Include education, work experience and salary required in your response. Address Ad No. 4437, Feedstuffs, Minneapolis 40, Minn.

CO-OP FEED MILL
MANAGER WANTED

for well established, fast-growing modern, electronic mill with large volume of bulk feed tonnage. Approximate annual tonnage 40,000 tons. Located in concentrated poultry raising section, Middle Atlantic State. Ideal living conditions in community of over 30,000 population. Less than one hour from large city, or summer resort areas.

Man with agricultural college education and strong feed and poultry industry background needed to assume complete managerial duties, including sales, service and manufacturing. Experience in ingredient market trading desirable, but not essential.

Write fully, in confidence, stating experience and salary desired. Our employees know of this ad. Address Ad No. 4460, Feedstuffs, Minneapolis 40, Minn.

HELP WANTED

SALESMEN WANTED—MEN CALLING ON feed dealers and elevators to carry well-established calf milk replacer as side line. Top commissions for the right men. Several established territories open. Write Box 5020, Minnehaha Station, Minneapolis, Minn.

WANTED—REGIONAL SALES MANAGER. Direct sales experience, management background. Age 35-50. To assume sales management responsibilities for Midwest branch of small feed company. Salary plus incentive bonus. Good advancement opportunities. Address Ad No. 4436, Feedstuffs, Minneapolis 40, Minn.

FEED SUPPLEMENT MANUFACTURER has opening for aggressive sales representative. Location West Central states. Must know formulation and nutrition. Degree required. Salary plus commission, plus expense, plus liberal benefits. Send resume to Ad No. 4453, Feedstuffs, Room 3214, 551 Fifth Ave., New York 17, N. Y.

NATIONAL SUPPLIER TO FEED MANUfacturer offers excellent opportunity to aggressive sales representative, salary, commission and expenses. Travel. Degree, knowledge of formulation and nutrition necessary. Location — Pennsylvania and Delmarva area. Send complete resume to Ad No. 4444, Feedstuffs, Minneapolis 40, Minn.

SALES REPRESENTATIVE — WE ARE looking for a top-notch man to represent us in the Cincinnati-Toledo area. The man we are seeking has had some experience with cattle feeding, feed manufacturing or animal nutrition; he is aggressive, ambitious, and expects to work hard for a good future. We are an established company selling an important feed ingredient, and this man will be our sole direct representative in the territory. Salary commensurate with experience and ability (not commission basis) plus car allowance and travel expenses. Please submit resume and state salary desired. All replies confidential. Address Ad No. 4418, Feedstuffs, Minneapolis 40, Minn.

SITUATIONS WANTED

GENERAL SALES MANAGER AND NUtritionist desires a change. Iowa State College graduate, married and 35 years of age. Address Ad No. 4461, Feedstuffs, Minneapolis 40, Minn.

GOING OUT OF BUSINESS — OWNER-manager retail feed, seed, farm supply business in northwest Iowa. 21 years' experience. Age 42. Qualified buyer, salesman, sales manager, credit manager. Will relocate. Address Ad No. 4459, Feedstuffs, Minneapolis 40, Minn.

ADMINISTRATOR — ADAPTABLE, POSItive, sound thinker. College graduate, experienced in personnel, production, inventories, maintenance, records, mature judgment. Fifteen years' feeds, farm supply and grain experience. Address Ad No. 4443, Feedstuffs, Minneapolis 40, Minn.

BUSINESS OPPORTUNITIES

FOR SALE — FEED MANUFACTURING plant and elevator. Located in north Texas. Served by five railroads. Address Ad No. 4458, Feedstuffs, Minneapolis 40, Minn.

FOR SALE — WAREHOUSE AND FEED mill property. Concrete, brick and tile, 17,000 sq. ft. floor space. Attached 22,000 bu. elevator; 26,000 sq. ft. land with 235 feet of trackage; 120 ft. frontage on U.S. highway. Close to downtown in Hutchinson, Kansas. Write Young & Sons Co., P. O. Box 486, Hutchinson, Kansas.

GRAIN & FEED PLANT OFFERED

Made $200,000 net in 1958. Of this made $1,000 weekly net on feed sales over 150 mile radius in central Texas. Storage and handling income was over $150,000 last year. Selling account age and health. Not distressed but price and terms are most attractive. For details write Ad No. 4447, Feedstuffs, Minneapolis 40, Minn.

NUTRITIONIST

Wanted nutritionist to take complete charge of nutrition, formulation, experimental research and laboratory for a medium size, long established Eastern Feed Manufacturer. Salary depends on experience and ability. Address ad No. 4457, Feedstuffs, Minneapolis 40, Minnesota.

MACHINERY FOR SALE

CHAMPION MOBILE GRINDER AND mixer units. Champion Portable Mill Co., 2105 Como Ave., Minneapolis 14, Minn.

IN EASTERN PENNSYLVANIA — ONE Port-O-Grist outfit on 1955 Chevrolet truck. Clark L. Smith, Leola, Pa.

MOBILE FEED MILL—GRINDER, SHELLer, mixer, molasses tank, bulk unloader. Howard Hughes, Route No. 1, North Adams, Mich.

ATTENTION ALFALFA DEHYDRATORS— Airplane tires and wheel assemblies to fit wagons, trailers and field choppers. Hey Machinery Co., Baldwin, Kansas.

FEED MIXER, 1-TON CAPACITY, GUARanteed first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

WHIRLAWAY AIRBLAST CAR LOADERS, cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P. O. Box 574, Jefferson City, Mo.

FOR SALE—USED BULK BODIES—ONE used Baughman, $300, as is, mounting charge $135; one used Seco, $400, as is, mounting charge, $75. Seco, Incorporated, Goodlettsville, Tenn.

ATTENTION — WESTERN PELLET MAchine owners. Have a M-20 machine for sale. Excellent buy for person wanting repair parts; dies, rolls, ring gear and pinion. Address Ad No. 4463, Feedstuffs, Minneapolis 40, Minn.

FOR SALE — 10 H.P. SPEEDYLECTRIC steam boiler, manufactured by Livingstone Engineering Co. A good unit to produce steam for 25 H.P. pellet mill. Mayfield Milling Co., Inc., Box 11, Mayfield, Ky.

ALFALFA DEHYDRATOR, SELF-FEEDer, 12'x20', truck type, good condition, $500. Two ton steel bin with tapered auger and electric brake motor for automatic bagging when connected to a scale, $250. Don Danneman, R.F.D. 5, Muscatine, Iowa.

FOR SALE—NEVER USED ERIEZ 20"x32" Magnetic Pulley; 7,500 lb. Double Ribbon Blender. Best Equipment Co., 1737 West Howard St., Chicago 26, Ill.; Phone AMbassador 2-1452.

FOR SALE—ENCLOSED MOTORS; RICHardson Scales; truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

TWO NEW KELLY TRUCK HOISTS; 2 TON Kelly mixer; Kelly molasses blender; 78'-14" horizontal screw conveyor; 9x5 all steel elevator leg, 100' height. All new equipment at large savings. Rebuilt Triumph shellers, hammermills, etc. Address Ad No. 4450, Feedstuffs, Minneapolis 40, Minn.

EQUIPMENT FOR SALE BY UNCLE Johnny's Feeds. Good condition: 17 Merchen Feeders type C, 25 lb. to 400 lb. per min.; two B. F. Gump old style bag setters (Vibrox); one No. 37061 Richardson air-electric bag settler; one No. 2000 S. Howes horizontal mixer with 10 H.P. 220/440 volt dust-proof motor with all electric control; one model E-50 Richardson bagging scale with manual bag clamp; one model No. 2 Eureka knife grinder; one No. 8A Richmond Gyro Whip sifter; one No. 5 Fairbanks standard floor scale; three 42-in. fans, 110-volt motor; one 48-in. fan, 220-volt motor; four No. 14500 Union Special sewing machine heads; one Westinghouse type G, ½ H.P. air compressor. Fair condition: eight platform scales, 1,000 lb. capacity; one model C-20, 20 ft. Elton chain type conveyor (bag stacker); one No. 2A Eureka cereal cutter with motor, starter and drive; one No. 2 Eureka cereal cutter with motor, starter and drive; one Richardson (3 bu.) grain scale; one Richardson (3 bu.) grain scale with sacking attachment. Poor condition: One Richardson (3 bu.) grain scale. Uncle Johnny's Feeds, P. O. Box 236, Houston 1, Texas; Phone Fairfax 3-3181.

MACHINERY WANTED

ALL KINDS OF GOOD USED GRAIN processing machinery. E. H. Beer & Co., Inc., Baltimore 2, Md.

CAN USE TRIUMPH 300 ZIP SHELLER. Must be in good condition. Also 20-inch water wheel. Wilson Feed Mill, 7604 Canal Road, Cleveland 25, Ohio.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

CHECK FEEDSTUFFS WANT ADS!!

Broiler, Market Egg School Planned in Ohio

COLUMBUS, OHIO — Integration in the poultry business will be given special attention at a broiler and market egg school to be held Feb. 24 on the Ohio State University campus.

Three speakers will discuss the subject in a day-long session which also includes reports on poultry research and broiler management.

Edward Karpoff, U.S. Department of Agriculture, will discuss integration generally. Dr. Everett Rogers, Ohio State University rural sociologist, will discuss producer attitudes toward contracts and intdgration at a special session for broiler producers, and Dr. Ralph Baker, agricultural economist at Pennsylvania State University, will talk at a session for egg producers on contracts in the egg business.

Also planned for the program are a report on poultry research work at the Ohio Agricultural Experiment Station and a question and answer period in which field servicemen for the poultry industry will discuss questions directed to them from the audience.

The separate sessions for broiler and egg producers are scheduled for the afternoon. Broiler producers will hear Dr. Rogers; Dr. E. I. Robertson, nutritionist for John W. Eshelman & Sons, Lancaster, Pa., who will discuss broiler management, and Bruce Davisson, executive secretary of the Ohio Poultry Improvement Assn., who will moderate a panel on broiler production in Ohio.

Speaking to the egg producers, along with Dr. Baker, will be Dr. E. C. Naber, poultry scientist at Ohio State University, on raising pullets, and Ohio State University agricultural engineers, who will report on new methods of poultry housing.

Sessions will be held in the agricultural administration building auditorium beginning at 9:30 a.m.

To Head Steel Building Sales for Peavey

MINNEAPOLIS—E. M. Holie has been named to head steel building sales for the Peavey building service, R. W. Kemerer, vice president and general manager of Peavey Lumber Yards, has announced. The appointment followed earlier information that the company had contracted a franchise to distribute the all-steel trussless "Wonder Buildings."

Mr. Holie has served in various architectural and building sales capacities since his graduation from the University of Minnesota architectural school in 1950. Prior to his schooling he had been associated with his father in private residential construction. In his new position he will coordinate steel building promotion and sales efforts, including field organizing for distribution of the buildings through Peavey lumber yard locations and direct selling. He will headquarter in the Minneapolis office of the organization which is an affiliate of F. H. Peavey & Co.

Williamson Firm Alters Organizational Setup

WHITTIER, CAL.—John W. Williamson, chairman of the board of John W. Williamson & Sons, Inc., Whittier, manufacturer of livestock feeding equipment, recently announced the following organizational changes:

E. N. (Ned) Frisius, civil engineer with many years of industrial experience, joins the company and becomes president, and H. E. (Hal) Prescott, formerly sales engineer, moves to the position of executive vice president.

This frees vice presidents Wes and Glenn Williamson to conduct an intensive sales campaign which is effective immediately, John Williamson said.

New Hopper Car Built To Handle Dry Bulk

CHICAGO—A new covered hopper car, designed to handle dry products in bulk, has been developed by General American Transportation Corp., Chicago, announced William J. Stebler, president of the firm.

The "Dry-Flo" cars are expected to find use in the feed industry for hauling dry ingredients in bulk. The company will lease the cars at $165 a month, or sell them outright for $11,800.

Mr. Stebler said the principal new feature of the car is the internal unloading gates, which are housed inside the car and assure "perfect" sanitation for a variety of dry products ranging from malt and feed ingredients to dry chemicals, foods, detergents and plastics.

He listed other features of the car as freedom from contamination, ease of cleaning, and greater rail clearance of the unloading gate outlets, enabling it to be used with any type of unloading system.

The Dry-Flo car will be built in two sizes—one of 3,500 cu. ft. capacity, the other 2,450 cu. ft. Either can be equipped with 50 or 70 ton trucks. Both sizes will be available as either single or multiple compartment cars, if desired. The 3,500 cu. ft. car, when compartmented, will have three compartments, while the smaller car will have two.

The unloading gate is located completely within the car to eliminate pickup of foreign materials. Mr. Stebler pointed out that the unloading gates open vertically and are not affected by the pressure or flow of the commodity being unloaded.

The car can be emptied by either vacuum or pressure pneumatic handling systems, by gravity feed into hoppers below the track, or by any mechanical conveying systems.

Mr. Stebler mentioned that the car's roof construction embodies exterior carlines, providing a smooth unbroken interior ceiling surface with no projections to cause "hang-up" points.

SunOlin to Start Work on Urea Plant

PHILADELPHIA—Construction of SunOlin Chemical Co.'s $11 million urea plant at north Claymont, Del. is scheduled to start in March, 1959 and should go into operation by the end of the year, James I. Harper, president of SunOlin, has announced.

The 13½-acre site is adjacent to Sun Oil Co.'s refinery at Marcus Hook, Pa.

SunOlin, a joint subsidiary of Sun Oil Co. and Olin Mathieson Chemical Corp., will use the Fauser-Montecatini process to produce urea. The license agreement was signed with the chemical firm of Montecalini, of Milan, Italy.

The new plant will have a capacity of 73,000 short tons per year of urea prills and crystals and will be the fourth urea plant in the U.S. and the 29th in the world using the Fauser-Montecatini processes.

In this process, liquid ammonia and carbon dioxide gas are reacted at 3,000 lb. pressure and 370° F. to form ammonium carbamate, which then decomposes to urea and water. This process will make the SunOlin plant one of the few in the U.S. that completely converts ammonia and carbon dioxide to urea, the company said.

The urea will be sold through Olin Mathieson Chemical Corp.'s existing marketing organization which will act as exclusive sales agent for SunOlin.

HAVE YOU TRIED COB MEAL?

PAXCO DEHYDRATED CORN COB MEAL is different from all other ground corn cob products—quality is uniform; dehydration eliminates spoilage worries and cuts dry-basis cost; supply is reliable, and prices are stabilized, year 'round. Write today.

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P. O. Box 120 Phone 222 Paxton, Illinois

Dr. James F. Harr | Dr. Reed R. Rumsey | Dr. John R. Ipson | Donald E. Dexheimer | W. James Orem

SALSBURY'S LABORATORIES APPOINTMENTS — Five promotions and appointments of personnel at Dr. Salsbury's Laboratories, Charles City, Iowa, have been announced by Dr. John G. Salsbury, vice president and general manager. A new department in the marketing division, industry services, will be headed by Dr. James F. Harr, formerly manager of biologics production. Dr. Reed R. Rumsey, former head of the company's veterinary pathology department, became the new manager of biologics production. Dr. John R. Ipson, who assisted Dr. Rumsey in the veterinary pathology department, moved up to department head. Donald E. Dexheimer, a pharmacist and former technical adviser, now heads the newly created position of products manager for feed additives in the marketing division. W. James Orem, former staff member of the education department of the marketing division, moved up to education manager.

West Virginia Paper Sets Sales Record

NEW YORK—Total sales of West Virginia Pulp & Paper Co. in the fiscal year ended Oct. 31, 1958, reached a new high of $208,109,000, compared with sales of $199,954,000 in fiscal 1957. David L. Luke, president, in his annual report to stockholders, credited a large measure of the increased sales to West Virginia's converting operations, which now manufacture into finished products nearly 25% of the company's output of paper and paperboard.

Mr. Luke stated that the company is planning further expansion of its converting operations in 1959. According to the report, West Virginia's converting operations benefited from two new products introduced during the year: Clupak stretchable paper, kraft grades of which are being used in the manufacture of multiwall and grocery bags, and coated bleached board, which is being widely used in folding cartons.

Reflecting the temporary weakness of the general economy last year, West Virginia earnings declined from $12,694,000, equal to $2.38 a share in 1957, to $9,575,000, or $1.78 a share, for the year now ended.

Mr. Luke said the company's new plant at Torrance, Cal., established in mid-1958 for the manufacture of multiwall shipping bags, ultimately would become a focal point for the production of grocery bags, supermarket checkout bags, shopping bags and corrugated shipping containers for West Coast markets.

The California plant, the company's first manufacturing operation west of the Rockies, is one of four multiwall operations established during the past year. The other plants are located at New Orleans, St. Louis, and Wellsburg, W. Va.

The report disclosed that the company now has pilot equipment capable of putting stretch into paper in an isotropic pattern — an equal amount of stretch in all directions.

Colorado Livestock Days Set Feb. 23-26

FT. COLLINS, COLO. — Special programs for dairymen, swine growers, beef producers, sheep raisers and cattle and sheep feeders are scheduled for Colorado State University's Livestock Days Feb. 23-26.

The four-day event is designed to keep livestock producers informed concerning the latest developments in all phases of production.

Main speakers will be Dr. Jay L. Lush, professor of animal husbandry at Iowa State College, Ames, and Dr. J. K. Loosli, head of the animal nutrition division, department of animal husbandry, Cornell University, Ithaca, N.Y.

An innovation in the program this year will be a special session for beef cattle producers. Topics of interest to range operators as well as mountain ranchers will be discussed.

The program is lined up as follows: Feb. 23, dairy fieldmen's short course; Feb. 24, separate meetings in the morning for dairy producers and sheepmen and a joint session in the afternoon; Feb. 25, separate morning meetings for swine growers, beef cattle producers and sheepmen and a joint session in the afternoon; Feb. 26, Feeders Day for sheep and cattle feeders.

For well-balanced nutritive feeds

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CORN DISTILLERS SOLUBLES WITH GRAINS

BOTH GRAIN FERMENTATION PRODUCTS

NADRISOL

CORN DISTILLERS DRIED SOLUBLES

These economy fortifiers are rich in proteins, vegetable fats, and highly nutritious. They also contain essential Vitamin B-G Complex factors, as well as unidentified growth factors. Mixing Nadrisol or Produlac in your formula feeds will promote quicker growth, greater meat and egg yield and will produce feeds your customers want to buy. It's a good way to gain and hold customer acceptance.

Sold only to manufacturers of formula feeds.

NATIONAL DISTILLERS PRODUCTS COMPANY
GRAIN PRODUCTS SALES
99 PARK AVENUE, NEW YORK 16, NEW YORK

What do you mean you give me something extra in every bag of mixing salt?

We mean that in every bag of Morton Mixing Salt there are extras that make a big difference in product quality and performance.

One of the most important is research. Morton has the most complete salt research laboratory in the world. Morton also has more than 25 years' experience in compounding salt and trace minerals. These facilities and "know-how" have resulted in a whole line of tested, superior ingredients in every bag of Morton Mixing Salt. One is Cuprous Iodide, a proven superior patented source of iodine that remains stable from mill to feed bunk.

Another important extra you get is quality control. The finest ingredients are blended and premixed under strict laboratory supervision to assure you Mixing Salts of unvarying high quality.

Extra quality, extra care go into Morton Mixing Salts—and you get them at no extra cost. What's more, you can get Morton Mixing Salt anywhere in the United States.

Mail coupon today for more information!

MORTON SALT CO., Dept. F-124-3
110 No. Wacker Drive
Chicago 6, Illinois

*Name*_____

*Company*_____

*Address*_____

*City*_____

*County*_____ *State*_____

Morton mixing salts

Trace Mineralized—Iodized—Special

Cattle and Calves on Feed in Selected States, with Comparisons*

State	Jan. 1 1958	Oct. 1 1958	Jan. 1 1959	Jan. 1, 1959, as % of Jan. 1 1958
	——1,000 head——			%
Pennsylvania ..	78	49	77	99
Ohio	176	90	190	108
Indiana	287	118	255	89
Illinois	649	372	643	99
Michigan	110	53	125	114
Wisconsin	115	55	113	98
Minnesota	367	205	400	109
Iowa	1,284	911	1,374	107
Missouri	292	147	292	100
No. Dak.	98	45	114	116
So. Dak.	266	155	290	109
Nebraska	543	443	637	117
Kansas	180	208	234	130
N. C.	4,367	2,802	4,667	107
Oklahoma	41	23	50	122
Texas	122	110	178	146
Montana	66	32	65	98
Idaho	114	85	149	131
Wyoming	37	**	45	122
Colorado	251	228	293	117
New Mex.	33	**	52	158
Arizona	190	135	210	111
Utah	60	33	73	122
Nevada	28	**	31	112
Washington ..	48	**	60	125
Oregon	34	**	35	103
California	398	489	504	127
Western ...	1,422	**	1,745	123
U. S.	5,867	**	6,489	111
13 States† ..	5,005	3,611	5,500	110
21 States‡ ..	5,687	3,986	6,266	110

*Estimates include only cattle being fattened for market as a more or less distinct agricultural enterprise, and exclude small operations incidental to dairy and general farming. Cattle thus fed are presumed to produce carcasses that will grade good or better.

**Not available.

†Includes Ohio, Indiana, Illinois, Minnesota, Iowa, Missouri, South Dakota, Nebraska, Kansas, Texas, Colorado, Arizona and California.

‡Includes above 13 states and Pennsylvania, Michigan, Wisconsin, North Dakota, Oklahoma, Montana, Idaho and Utah.

CATTLE

(Continued from page 1)

rado, the second ranking state, was up 17%. All other states in the West except Montana showed increases which ranged from 3% in Oregon to 58% in New Mexico.

Marketings of fed cattle during the last quarter of 1958 were 11% larger than a year earlier in the 13 states for which quarterly estimates are available for both years. The number placed on feed during this period was up 9%. The number on feed Jan. 1, 1959, in these states was 10% above a year earlier, and 52% above Oct. 1, 1958. A year earlier, numbers on feed increased 56% from Oct. 1 to Jan. 1.

Weight of Cattle on Feed

A breakdown of January numbers by weight groups in the 13 states indicates a 15% increase from a year earlier in the number of cattle on feed weighing over 900 lb. The 1,381,000 head weighing over 900 lb. on Jan. 1, 1959, was 177,000 more than on Jan. 1, 1958. The number weighing less than 900 lb. totaled 4,119,000 head—up 8% from a year earlier. In the 21 states now in the quarterly program, 20% of the cattle and calves on feed Jan. 1, 1959, weighed under 500 lb., 24% were in the 500-699 weight group, 31% weighed 700-899 lb., 18% were 900-1,099 lb., and 7% weighed over 1,100 lb.

Time on Feed

Cattle on feed less than three months for the 13 states for which comparable data are available were 9% above Jan. 1, 1958, while the number on feed 3-6 months was up 14%, and the number on feed over six months was up 9%. As a percent of total cattle on feed Jan. 1, the number on feed less than three months was 77%—compared with 78% a year earlier. The number on feed 3-6 months was 19% of the total, compared with 18% last year. Those on feed more than six months represented 4% of the total both years.

Kinds on Feed

In the 21 states now included in the quarterly reporting program, steers and steer calves comprised 71% of the cattle and calves on feed Jan. 1, 1959. Heifers and heifer calves made up 28% of the total while cows and other cattle made up 1%.

Marketing Intentions

In the 13 states for which comparable data are available, cattle feeders reported they expect to market 2,471,000 head of cattle in January, February and March. If intentions are carried out, marketings this quarter would be 13% above the 2,178,000 head marketed in the same three-month period of 1958. Present plans are to market 3,029,000 head of the January inventory after April 1, 7% more than the number marketed after April 1 last year from those on feed Jan. 1. Cattle feeders in the 21 states expect to market 2,827,000 head—45% of the Jan. 1 inventory — during the first three months of 1959. Of the Jan. 1 total number on feed, 15% are expected to be marketed in January, 16% in February, and 14% in March.

21 STATES COVERED

The U.S. Department of Agriculture's quarterly report on numbers of cattle on feed now includes data for 21 states. This reflects the growing importance and widening area of cattle feeding operations. Formerly the report covered only 13 states. The states recently added are Pennsylvania, Michigan, Wisconsin, North Dakota, Oklahoma, Montana, Idaho and Utah.

MIDWEST

(Continued from page 1)

a review of Midwest activities and plans. Larry Alley of Pay Way Feed Mills, Kansas City, will project production needs in relation to the Feed Production School. Dr. James McCrea, highlighting activities in the field of feed man-veterinary relations, will take a "New Look at Veterinary-Feed Relations"; Dr. McCrea is a practicing veterinarian at Platte City, Neb.

New opportunities for rendering service also will be outlined in a series of brief talks. Dr. Lloyd Washburn and Dr. W. E. Morgan of Colorado State University will discuss meeting with county agents. Ray Van Poucke, Ames (Iowa) Reliable Products Co., and Dr. George Browning of Iowa State College will report on a conference for feed salesmen and dealers. "Working Together" will be the subject of a talk by Dr. Harold Jones, extension director of Kansas State College.

Contract Feeding

The lively topic of integration also is on the program; Rod Turnbull, editor of the Weekly Star Farmer, Kansas City, will tell about "Contract Feeding as Seen by an Agricultural Editor."

"Stimulating Feed Sales Through the Grain and Hay Bank" will be the subject of talks by John Bonnett, Bonnett Feed & Grain Co., Bushnell, Ill., and Bud Swanson, Swanson Elevator Co., New Sharon, Iowa.

The challenge which faces the industry will be outlined in the afternoon of the first day. Opening the session will be a talk on "The National Outlook" by Dr. Ralph Robey, National Association of Manufacturers, Washington. Ray Ammon, the Quaker Oats Co., St. Joseph, Mo., president of the Midwest, will present "The Challenge." Homer Davidson, president of the American Meat Institute, Chicago, will have as his topic "Laying Down the Challenge," and E. V. Stadel, Illinois Agricultural Association, Chicago, will talk on "Food Comes First."

Human nutrition and the promotion of meat, milk and eggs—the end products of feeds—will be discussed at the morning session Feb. 17. Frank Atchley, Grocery Manufacturers of America, New York, will open the discussions with a talk on "Food for Man." Dr. Ruth Leverton, U.S. Department of Agriculture, Washington, will point out that "You Are What You Eat." Dr. Charles Glen King, Nutrition Foundation, New York, will tell of protein and its importance in the human diet.

John J. Bott Vernon A. Magnuson

APPOINTED — Wiley Akins, vice president and general manager of the Peter Hand Foundation, Chicago, has announced the appointment of John J. Bott as district manager and Vernon A. Magnuson, as assistant district manager for the foundation. Mr. Bott will be representative in the territory of west and south Texas. He studied poultry and animal husbandry at Colorado State University, and he has had more than 17 years of experience in the feed industry. Mr. Magnuson will work out of Mason City, Iowa, for the foundation. He has served the feed industry in that state for more than 15 years.

Food Promotion

Covering promotion of the foods will be Carl Neumann, National Livestock & Meat Board, Chicago (meat and meat products); Dr. Gaylord P. Whitlock, National Dairy Council, Chicago (milk and milk products), and Lloyd Geil, Poultry and Egg National Board, Chicago (eggs and poultry products).

"Food for beast," or feed, will have the emphasis at the afternoon session; authorities on various aspects of feeding will talk. Dr. Herbert Luther, Chas. Pfizer & Co., Inc., will discuss antibiotics; Dr. C. F. Chappel, Eli Lilly & Co., will report on hormones and tranquilizers; Dr. J. F. Harr, Dr. Salsbury's Laboratories, will discuss medicaments (arsenicals-coccidiostats); and Dr. R. F. Elliott, American Cyanamid Co., will discuss nutrients (vitamins - minerals-amino acids). R. F. Kneeland, Food and Drug Administration, Washington, will tell "What the Future Can Bring."

There also will be a panel to ask questions; the panel will include a feed company president, nutritionist, sales manager, feed control man and a veterinarian.

The annual convention banquet will be held Monday evening, Feb. 16. The program will include presentation of the Oscar Straube memorial to Kansas State College.

Exhibits and displays will be in the Colonial Ballroom of the hotel.

Oilseed Meal Futures Prices Move Lower

MEMPHIS—Oilseed meal futures generally moved down on the Memphis Board of Trade during the past week, resulting from less aggressive cash oil meal business.

Trade interests liquidated their January positions before the final trading day, Jan. 20. The January option expired orderly.

Both trade and speculative sources were buying in deferred contracts during the period.

Some market observers said a setback was due after recent advances.

Unrestricted soybean oil meal closed Jan. 21 $1 lower to 55¢ ton higher, Eastern Trunk Line soybean oil meal was unchanged to $1.25 lower, bulk solvent cottonseed oil meal unchanged to $1 lower, and sacked old process cottonseed oil meal was unchanged. August unrestricted soybean oil meal was the only gainer.

Heavy White, Light Turkeys Tested for Pullorum Show Rise

WASHINGTON — More heavy white breed turkeys and light breed turkeys were tested for pullorum disease during December, 1958, than in December a year earlier, the U.S. Department of Agriculture reports.

The report is another indication that turkeys will be produced in larger numbers in 1959. Also reported was an increase in testing of chickens for supplying broiler hatching eggs and a drop in testings of egg-type chickens.

Testings of heavy write breed turkeys during December, 1958, totaled 136,655, compared with 107,275 in December, 1957—an increase of 27%. Testings of other heavy breeds in December totaled 519,273, compared with 635,808 for December, 1957, a decrease of 18%. Testing of light breed turkeys totaled 67,611—up 2% from December, 1957.

During the months of July through December, 1958, testings of heavy white breeds were 49% larger than during these months of 1957. The testings of other heavy breeds were down 6% from this period a year earlier, and testings of light breed turkeys were 65% more than during July through December, 1957.

December chicken testings in states for which comparisons are available showed a total of 2,794,873 chickens for supplying broiler hatching eggs, an increase of 27% over December, 1957. Testings July through December, 1958, were up 19% from this period in 1957.

The number of chickens for other purposes (egg-type) tested during December, 1958, totaled 2,485,747, a drop of 4% from the number tested in December, 1957. The number of egg-type chickens tested July through December, 1958, totaled 9,488,948, a reduction of 3% from this period in 1957.

CARGILL

(Continued from page 8)

research farm near Elk River, Minn.; investigation of grain storage problems at a centrally located experimental elevator and direction of genetic studies in hybrid corn and hybrid sorghums at three midwest breeding stations and more than 1,300 test plots from the Canadian border to Florida.

● A consumer-product department concentrating at the outset on dog food manufacture at Cargill's Kansas City, Kansas, plant, and on sale—mainly through grocery outlets—of canned and various dried forms of dog foods. The unit will be headed by Ralph B. Hollingsworth.

● A consumer-product department operating in specialized merchandising areas and headed by Donald B. Butler. Mr. Butler's responsibility, formerly for hybrid corn, has been extended to include all hybrid corn and hybrid sorghum production and sales—under managership of George L. Jones—and production and sale of Miracle Mulch, a new gardening product, under Eugene H. Knutson.

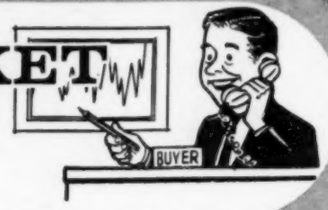
A third department, still in the planning stage, will be concerned with industrial raw materials derived from farm products, the announcement said.

Holt Products Names Sales Representative

MILWAUKEE — Appointment of Gerald Joosse as sales representative in eastern Wisconsin is announced by Holt Products Co., manufacturer of vitamin, antibiotic and trace mineral supplements for use in poultry and livestock rations. Mr. Joosse has been manager of Joosse Farm Supply, Waubeka, for the past four years.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS



NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Denver: Demand fair; trend steady; supply good; 2,250 A, 300 D 22¢ lb.

Chicago: Demand fair; supply adequate; straight A feeding oil, with 10,000 units vitamin A per gram 7@8¢ a million units of vitamin A, l.c.l., packed in 55-gal. drums, f.o.b. Chicago, drums included.

Boston: Demand light; supply good; 600 D, 1,500 A 17½¢ lb.; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16½¢; 300 D, 750 A 14¾¢; 400 D, 3,000 A 20¢; 300 D, 3,000 A 19¼¢; 75D, 750 A 14¾¢.

Minneapolis: 10,000 A 35¢ lb.; 300 D, 2,250 A 21½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 75 A 18½¢ lb.

New York: Demand fair; trend steady; supply limited; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13⅝@15⅝¢ 1,500 A 15⅛@17¢, 2,250 A 17⅛@20¢, 3,000 A 19⅛@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19⅛¢; f.o.b. Massachusetts, New York or Pennsylvania.

ALFALFA MEAL

Ft. Worth: Demand good; supply limited on dehydrated, sufficient on suncured; 17% protein dehydrated $66, delivered Ft. Worth area, truck; Kansas dehydrated, 17%, 100,000 A $68.86, rail; suncured 13% No. 1 ¼-in. grind $40, truck 10¢ rail, immediate.

Philadelphia: Demand slow; trend unsettled; supply fair; 17% dehydrated $75.

Portland: Demand good; supply ample; trend unchanged to higher; 15% sccuncured $41; dehydrated $67.50.

Denver: Demand good; trend firm; supply ample; $52.

St. Louis: Demand slow; trend steady; supply ample; 13% fine suncured $39.50; dehydrated, 17%, 100,000 units A $70.

Omaha: Demand good; trend higher; supply very tight; 17% dehydrated, 100,000 A units, bulk pellets $60; sacked meal $65, Omaha basis.

Cincinnati: Demand fair; trend steady to higher; supply adequate; 17% dehydrated, 100,000 vitamin A $72.

Los Angeles: Demand fair; trend firm; supply adequate; dehydrated meal, 17% protein, 100,000 A $49 bulk; dehydrated pellet meal, 17% protein, 100,000 A $52 bulk; suncured meal, 15% protein $42@43 bulk; suncured crumbles, 15% protein $44@45 bulk.

Chicago: Demand fair; 17% dehydrated, with 100,000 units vitamin A guaranteed $66.50; 13% No. 1 fine ground $51.50@52.

New Orleans: Demand fair; trend steady; supply ample; 17% $69@70; pellets $64@66.

Boston: Demand spotty; supply adequate; dehydrated 17% $71, suncured 13% $50, nominal.

Minneapolis: Anticipated shortage becoming more apparent; demand good for tight supplies at prices $5 higher than week ago; 17%, 100,000 units vitamin A, reground pellets $70; oiled reground $72.

Memphis: Demand fair; trend steady; supply scarce; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $64.

Seattle: Demand fair; trend firm; supply good; 15% protein suncured $44, truck loads; 136,000 A unit dehydrated $69, truck loads.

Kansas City: Demand strong; trend steady since $5 jump this week; inventories are dwindling fast with a tight squeeze seen before new crop time; dehydrated alfalfa with 17% protein and 100,000 units vitamin A guaranteed on arrival: reground pellets $65 sacked, greased meal $67 sacked, pellets $60 bulk; 18% protein, 125,000 units A meal $69, sacked; non-guaranteed A 17% protein pellets $53, bulk; suncured demand is fair with supplies adequate, No. 1 fine ground $38, No. 1 ¼-in. $36, No. 2 ¼-in. $34, sacked.

Buffalo: Demand fair; trend steady; supply adequate; $73.50.

ANIMAL FATS (STABILIZED)

Ft. Worth: Demand fair; supply sufficient; prime tallow, tank cars 7¼¢ lb.; drums 8¾¢ lb., f.o.b. north Texas packing plants with returnable drums.

Chicago: Demand and supply fair; bleachable fancy tallow, tank trucks or carlots 7⅝@7¼¢ lb.; yellow grease 6¾@7¢.

San Francisco: Demand fair; supply ample; bleachable fancy 7¼¢ lb.; yellow grease 6¾¢ lb.

New Orleans: Demand light; supply adequate; trend steady; 7½@8¢ lb., tank cars.

Boston: Demand moderate; supply good; tallow 7⅝¢ lb.; yellow grease 7¼¢ lb.

Atlanta: Demand good; trend steady; supply ample; 7¼¢ lb.

Louisville: Demand reasonable; trend steady; supply good; bleachable fancy 7⅝¢ lb.; white tallow 7⅝¢ lb.; yellow grease 6¢ lb.

Kansas City: Demand slow; trend steady; supply adequate; bleachable fancy tallow 7¢ lb., tank car.

St. Paul: Interest returning to export demand but soaper and feed demand are only moderate; price for bleachable fancy tallow down ⅛¢ lb. to 6⅞¢ lb., f.o.b. producer's plant.

BARLEY FEED

Ogden: Supply average; rolled $51@56; whole barley $43@48.

Philadelphia: Demand slow; trend unsettled; supply light; pulverized $56.

Portland: Demand good; supply ample; trend unchanged; rolled $64, ground $62.

Chicago: Demand good; supply adequate; $59.

San Francisco: Demand fair; supply ample; rolled $65.60, ground $64.50.

Baltimore: Demand good; supply adequate; $49.50.

New Orleans: Demand slow; trend unchanged; supply light; $59@60.

Los Angeles: Demand limited; trend steady; supply adequate; standard rolled $3.28 cwt., standard ground $3.28 cwt.

Boston: Demand and supply steady; $47.

Seattle: Demand and supply fair; trend steady; $53, bulk, truck lots.

BENTONITE (SODIUM)

Denver: Demand fair; trend good; supply ample; $21.

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $31.50; 200 mesh fine $31.

Chicago: Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points; granular 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50, f.o.b. Belle Fourche, S.D., minimum 30-ton carlots; 80 granular $13.50 net; 200 mesh fine $13.25 net.

BLOOD FLOUR

Louisville: Demand fair; trend steady; supply ample; $125@130.

BLOOD MEAL

Ogden: Supply average; $110, in 100-lb. bags.

Portland: Demand good; trend higher; supply limited; $115.

San Francisco: Demand good; supply tight; $8 a unit of ammonia.

Los Angeles: Demand and trend steady; supply adequate; $7.50 a unit of ammonia.

New Orleans: Demand fair; trend unchanged; supply light; $120@125.

Chicago: Demand fair; supply tight; $150, guaranteed 80% protein.

Louisville: Demand fair; trend steady; supply good; $125@130.

BONE MEAL (STEAMED)

Ft. Worth: Demand fair; supply light; $85, local manufacture.

Portland: Demand slow; supply ample; trend unchanged; $100.

Denver: Demand good; trend strong; supply tight; none until February, $77.50, Bay Shore, Cal.

Los Angeles: Demand and trend steady; supply limited; imported $73.50 in 20-ton lots.

Cincinnati: Demand good; trend steady; none available; $110, Cincinnati.

San Francisco: Demand good; supply fair; $72.50.

New Orleans: Demand slow; supply normal; trend steady; $92@97.50.

Chicago: Demand good; supply tight; $95.

Boston: Demand and supply steady; $90.

Buffalo: Demand good; trend steady; supply ample; $90.

Seattle: Demand steady; trend firm; supply good; $87, ex-dock, truck lots.

Louisville: Demand fair; trend steady; supply normal; $100@110.

BREWERS DRIED GRAINS

Ft. Worth: Demand slow; supply very scarce; 26% protein $62, February.

Philadelphia: Demand slow; supply light; $65.50.

Cincinnati: Demand fair; trend higher; supply adequate; $63.

Los Angeles: Demand and trend steady; supply limited; $49.50 bulk, $53.50 sacked.

Chicago: Demand fair; supply tight; 26% $54.50@55.

San Francisco: Demand fair; supply ample; $54.

St. Louis: Demand good; trend higher; supply limited; $53.50.

New Orleans: Demand fair; trend steady; supply adequate; $54@55.50.

Boston: Demand good; supply adequate; 26% $65, 22% $58.

Buffalo: Demand and supply fair; trend steady to higher; $60, bulk, Boston.

Louisville: Demand good; trend steady; supply ample; $54.

BREWERS DRIED YEAST

Portland: Demand good; supply ample; trend unchanged; 8½¢ lb.

Omaha: Trend steady; 10½¢ lb.

Los Angeles: Demand and trend steady; supply adequate; 10¢ lb. in 5-ton lots; 11¢ lb. in 1-ton lots; 12¢ lb. in less than 1-ton lots.

Denver: Demand light; trend steady; supply ample; 9¢ lb., f.o.b. Golden, Colo.

San Francisco: Demand fair; supply good; 10¢ lb.

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10¼@12½¢ lb., l.c.l.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10¾@12½¢ lb., l.c.l.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11½¢ lb.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb; ton lots 11¢ lb., f.o.b. New Jersey.

St. Louis: Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 12¢ lb. in less than ton lots.

Boston: Demand and supply steady; 10¢ lb.

Seattle: Demand slow; trend steady; supply ample; $12 cwt.

Louisville: Demand fair; trend firm; supply good; 10@10½¢ lb.

BUTTERMILK-CONDENSED

Ogden: Supply average; $4.40, 100-lb. drum.

Philadelphia: Demand slow; supply light; $4.25 cwt.

Wichita: Demand slow; supply about offsets demand; $2.90 cwt. in barrels.

Los Angeles: Demand fair; trend unchanged; supply adequate; 5½¢ lb. in 100-lb. lots; 4½¢ lb. in 500-lb. lots.

San Francisco: Demand fair; supply good; $5 cwt.

Chicago: Demand light; supply adequate; $3.25@3.50 cwt. in carlots.

New Orleans: Demand slow; supply normal; trend steady; $4.25@4.30 cwt.

Boston: Demand slow; supply light; 3½¢ lb.

Louisville: Demand dull; trend steady; supply nil; $4.25 cwt.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $15.28, flour $10.28.

Buffalo: Crystals $16.11, flour $11.11.

Toledo: Crystals $17.96, flour $12.96.

Boston: Crystals $16.53, flour $11.63.

Limecrest, N.J.: Crystals $10.50,flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $8@9 cwt.

Los Angeles: Demand and trend steady; supply ample; $10.25.

Chicago: Demand steady; supply adequate; fine grind, plain $9.54, 100-lb. bags; bulk, in hopper cars, fine grind $7.54; bulk in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

Seattle: Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

CHARCOAL

Los Angeles: Demand fair; trend steady; supply ample; hardwood poultry $155 in less than ton lots; $144.40 in ton lots.

San Francisco: Demand steady; supply ample; $141.

Chicago: Demand quiet; supply adequate; poultry charcoal $110 in 50-lb. multiwalls.

Boston: Demand and supply light; $100.

COCONUT OIL MEAL

Portland: Demand dull; supply ample; trend unchanged; $84.

Los Angeles: Demand fair; trend firmer; supply tight; copra cake $87@89, bulk.

San Francisco: Demand good; supply tight; solvent $82.50; expeller $92.

Seattle: Demand fair; trend steady; supply ample; $77, via truck (California).

COD LIVER OIL (FORTIFIED)

Boston: Demand fair; supply good; 600 D, 2,250 A 19¢ lb.; 300 D, 3,000 A 20½¢; 300 D, 2,250 A 18½¢; 600 D, 1,500 A 18¢; 300 D, 1,500 A 17¢.

New York: Demand limited; supply fair; trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14⅝@15½¢, 1,500 A 18⅛@20¢, 2,250 A 18⅛@21¢, 3,000 A 21⅛@23¢; 600 ICU, 1,500 A 17⅛@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

CONDENSED FISH SOLUBLES

Denver: Demand fair; trend steady; supply ample; $187.40.

Los Angeles: Demand and trend steady; supply adequate; 5¢ lb.

New Orleans: Demand light; supply limited; trend steady; 50% solid $97@100, f.o.b. Gulf.

Boston: Demand active; supply scarce; 5¢ lb., nominal.

New York: Demand and supply good; trend steady; 5⅛@5¼¢ lb., f.o.b. eastern shore.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $59.80, meal $91.80.
Atlanta: Feed $65.98, meal $97.98.
Birmingham: Feed $64.64, meal $96.64.
Boston: Feed $64.84, meal $96.84.
Chicago: Feed $53, meal $85.
Cleveland: Feed $61.14, meal $93.14.
Denver: Feed $63.51, meal $96.51.
Ft. Worth: Feed $61.96, meal $93.96.
Indianapolis: Feed $58.36, meal $90.36.
Kansas City: Feed $53, meal $85.
Louisville: Feed $60.21, meal $92.21.
New Orleans: Feed $63.20, meal $96.20.
New York: Feed $64.43, meal $96.43.
Norfolk: Feed $63.71, meal $95.71.
Philadelphia: Feed $64.02, meal $96.02.
Pittsburgh: Feed $61.96, meal $93.96.
St. Louis: Feed $53, meal $85.

CORN OIL MEAL

Cincinnati: Demand fair; trend higher; supply adequate; $61.

Louisville: Demand slow; trend strong; supply light; $63.45, up $2.50.

COTTONSEED OIL MEAL

Ft. Worth: Demand excellent for meal, improved for hulls; limited offerings, carlots unobtainable; truck lots, 41% old process $76, prompt; pellets $2 additional; cottonseed hulls $16.

Ogden: Supply average; 41% $70@75.

Philadelphia: Demand fair; supply light; $86.

Portland: Demand good; supply tight; trend higher; $82.

Wichita: Demand good; supply sufficient; 41% old process $76.

Omaha: Demand poor; trend steady; supply ample; 41% solvent $79, bulk.

Chicago: Demand good; supply tight; hydraulic $73.50@74.50; solvent $73.50@74.50.

San Francisco: Demand good; supply tight; expeller $78; solvent $81.

St. Louis: Demand fair; trend higher; supply limited; solvent $80.

Cincinnati: Demand poor; trend higher; supply adequate; $82.

Los Angeles: Demand good; trend steady; supply limited; $70, bulk.

Denver: Demand fair; trend firm; supply very tight; $77, nominal, January, February, March.

New Orleans: Demand light; supply average; trend steady; $81@82.

Boston: Demand good; supply fair; $92.

Louisville: Demand slow; trend strong; supply ample; old process $80.50, new process $79.50, both up $1.50.

Seattle: Demand good; trend strong; supply limited; 41% expeller process $88, truck lots, resale only.

Buffalo: Demand fair; trend steady; supply adequate; $91.50, Boston.

Memphis: Demand light; trend easier; supply scarce; prime 41% protein, old process $75; new process, 41% solvent $74.

Kansas City: Demand slow in this area because of price; trend steady; supply adequate; solvent and old process $74.50@75, Memphis.

CURACAO PHOSPHATE

New York: Trend steady; ground Curacao phosphate in 100-lb. bags $48, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

D ACTIVATED ANIMAL STEROL, POWDERED

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢, warehouse.

New York: Demand and supply good; trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

Kansas City: Demand fair; trend steady; supply adequate; 1,500 ICU 9⅝@10¢ lb.; 3,000 ICU 11½@12¢ lb. in ton lots or larger.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply adequate; 4,000,000 U.S.P. units per lb.; 15¢ lb. in ton lots; less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales in 100-lb. multiwall bags, $3 less in bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $71.50, net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $68.50 in bulk.

Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17%, carload $60, truckload $60.75, net ton, f.o.b. Coronet in 100-lb. multiwall bags, $57 and $57.75 in bulk.

Cincinnati: 18% phosphorus $81, sacked; 13% phosphorus $64.98, sacked, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Chicago: Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

Bonnie, Fla.: Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

Texas City, Texas: 18.5% minimum phosphorus, 21% minimum calcium, 24% maximum, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

Trenton, Mich.: Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

Portland: Demand good; supply ample; trend unchanged; $115.

Denver: Demand good; trend firm; supply ample; $92.80.

Cincinnati: 18½% phosphorus $92@93.

DISTILLERS DRIED GRAINS

Philadelphia: Demand slow; supply light; trend unsettled; light $68.

San Francisco: Demand fair; supply ample; solubles $85.

Boston: Demand active; supply short; medium dark $67, light $66.

Buffalo: Demand good; trend higher; supply fair; $64, bulk, Boston.

Seattle: Demand good; trend firm; supply nil; $69, truck lots.

Louisville: Demand good; trend strong; supply light; bourbon grains: light $58, up $3; dark $59, up $3; solubles $77, unchanged.

DRIED BEET PULP

Ft. Worth: Demand fair; supply sufficient; carlots, 50-lb. papers, January, plain or molasses $58.33, delivered Ft. Worth.

Ogden: Supply normal; $44@48.

Portland: Demand good; supply ample; trend unchanged; $50.
San Francisco: Demand good; supply fair; $55.50.
Los Angeles: Demand fair; trend steady; supply light; molasses $52.50@53.60, bulk.
New Orleans: Demand fair; trend unchanged; supply sufficient; $57@58.
Boston: Demand steady; supply ample; $56.
Buffalo: Demand poor; trend steady; supply adequate; $58, Boston.
Seattle: Demand good; trend firm; none available; $49, carlots.
Atlanta: Demand fair; trend steady; supply ample; $62.25.

DRIED BUTTERMILK

San Francisco: Demand fair; supply ample; 11½¢ lb.
Los Angeles: Demand and trend steady; supply adequate; 11¾¢ lb.
New Orleans: Demand fair; trend unchanged; supply ample; $11.50@12 cwt.
Chicago: Demand good; supply scarce; medium acid, nominally $11; sweet cream $11.25 cwt., in carlots.
Louisville: Demand slow; trend steady; supply normal; 12@12½¢ lb.

DRIED CITRUS PULP

Los Angeles: Demand and trend steady; supply very limited; orange pulp $45, bulk; lemon pulp $43, bulk.
San Francisco: Demand and supply fair; meal $54.
New Orleans: Demand fair; trend steady; supply ample; $38.50@41, f.o.b. Florida.
Boston: Demand and supply fair; $37.50, f.o.b. Florida.
Buffalo: Demand poor; trend steady; supply fair; $35, f.o.b. Florida points.
Atlanta: Demand fair; trend steady; supply ample; $35@40; meal $30@35, both f.o.b. Florida producing points.

DRIED SKIM MILK

Philadelphia: Demand slow; supply light; $12.50 cwt.
Ogden: Supply average; $15.50, 100-lb. drum.
Portland: Demand good; supply ample; trend unchanged; 13¢ lb.
Cincinnati: Demand fair; trend steady; supply adequate; 10½@10¾¢ lb.
Los Angeles: Demand fair; trend unchanged; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.
San Francisco: Demand and supply fair; 13½¢ lb.
New Orleans: Demand slow; supply ample; trend steady; $11.50@12 cwt.
Chicago: Demand good; supply light; $10.50@11.25 cwt. in carlots.
Boston: Demand good; supply short; 12¢ lb.
Louisville: Demand fair; trend steady; supply normal; 11½@12¢ lb.
Minneapolis: Good demand for tight supplies; firm trend; $11@11.25 cwt.

DRIED WHEY

Ft. Worth: Demand fair; supply adequate; carlots, standard $6, January; $6.25, January, ton lots, f.o.b. warehouse, Ft. Worth.
Philadelphia: Demand slow; supply light; $6.25 cwt.
Ogden: Supply normal; $6.90, 100-lb. bag.
Portland: Demand good; supply ample; trend unchanged; $7 cwt.
Chicago: Demand fair; supply adequate; $5.50, f.o.b. plant.
Cincinnati: Demand fair; trend steady; supply adequate; $6.15 cwt.
Los Angeles: Demand and trend steady; supply ample; $6.16 cwt. in carloads; $6.40 cwt. in l.c.l.
San Francisco: Demand steady; supply good; $5.75 cwt.
New Orleans: Demand fair; trend unchanged; supply adequate; $6@6.50 cwt.
Boston: Demand steady; supply light; 5½¢ lb., f.o.b. plant.
Minneapolis: Fair demand; fair supply; $5.50 cwt., producers' points.
Louisville: Demand slow; trend stronger; supply ample; 6½¢ lb.
Seattle: Demand and trend steady; supply good; $6.40 cwt., ex-warehouse, l.c.l.
Kansas City: Demand fair; trend steady; supply light; $5.50 cwt., producers' plants for regular or partially delactosed.

FEATHER MEAL (HYDROLYZED)

Ft. Worth: Demand fair; supply light; 85 to 87% protein $112.50, f.o.b. trucks, north Texas plants.
Los Angeles: Demand and trend steady; supply ample; $1.25 a unit of protein.
Boston: Demand good; supply tight; $85, nominal.
Salisbury, Md.: Good demand; supply very limited; $95 bulk, f.o.b. producers' plants.
Atlanta: Demand and trend strong; demand exceeds supply; $105.50, f.o.b. Georgia producing points.

FISH MEAL

Ft. Worth: Demand good; limited offerings; 60% protein Angola $162.50, immediate; 65% Peruvian $163, prompt, f.o.b. Houston.
Ogden: Supply normal; $2.20 a unit, f.o.b. Coast; 65% $151@153.
Portland: Demand good; supply ample; trend unchanged; $2.25 a unit, f.o.b. Vancouver.
Denver: Demand good; trend lower; supply very tight; $2.40 a unit of protein, f.o.b. West Coast.
Cincinnati: Demand fair; trend steady; supply adequate; $164.
Los Angeles: Demand good; trend firm; supply tight; local production, 60% protein $2.40 a unit.
San Francisco: Demand good; supply tight; imported $2.42½ a unit, f.o.b. dock; domestic $2.48 a unit.
New Orleans: Demand and supply light; trend steady; menhaden, 60% $165@166; scrap $147@148, f.o.b. Gulf.
Chicago: Demand good; supply tight; eastern menhaden fish meal, 60% protein $163@165.50; Gulf $160@163; western blended, 60% protein $180, delivered Midwest; Canadian herring, 73% protein $2.22 a unit of protein subject to production.
Boston: Demand active; supply scarce; $164, nominal.
Buffalo: Demand good; trend steady; supply ample; 60% protein, menhaden $175 bulk, $180 sacked.
Minneapolis: Good demand; supply quite tight; price up $3@5 ton; 60% $180; 70% Canadian herring $189.
Louisville: Demand slow; trend firm; supply light; last reported sale $175 in carlots.
Seattle: Demand fair; trend firm; supply good; $2.38 a unit protein, truck lots (Canadian production).
Atlanta: Demand good; trend steady; supply limited; Angola $169.

HAY

Philadelphia: Demand slow; supply light; $32@35.
Denver: Demand and trend average; supply ample; alfalfa, baled $24 and $25, first and second cutting.
Ft. Worth: Demand fair for alfalfa; practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $36@38, No. 2 $34@36; prairie No. 2 $26@28; No. 2 Johnson grass $24@26, delivered Texas common points.
Ogden: Supply average; $1@1.25 bale; $18 ton in the barn.
Portland: Demand good; supply ample; trend unchanged; $32@33.
Wichita: Demand poor; supply ample; prairie $12, alfalfa $12@15.
Boston: Demand and supply steady; No. 2 timothy $40@42.
Cincinnati: Demand poor; trend steady; supply adequate; by truck, No. 1 timothy $34; No. 1 second cutting green alfalfa $31; mixed $27; wheat or oat straw $19.
Los Angeles: Limited demand with light supplies; U.S. No. 1 $33@35; U.S. No. 2 leafy $30@32; U.S. No. 2 green $28@30; U.S. No. 2 $24@26.
Seattle: Demand and supply fair; trend firm; alfalfa, U.S. No. 2 green $35, truck lots.
Louisville: Demand very dull; trend steady to weak; supply good; No. 1 hay, any variety $26; No. 2 hay, any variety $23; all straw $25; strong demand for straw and low grade hay.

HOMINY FEED

Cincinnati: Demand poor; trend steady; supply adequate; $51.50.
Boston: Demand and supply steady; $58.
St. Louis: Demand slow; trend higher; supply limited; yellow $49.50.
New Orleans: Demand fairly good; trend steady; supply light; $49.50@50.50.
Chicago: Demand good; supply tight; $48.50@49.
Buffalo: Demand good; trend steady; supply fair; $54, bulk, Boston.
Seattle: Demand and supply good; trend firm; $56, carlots.
Memphis: Demand nil; trend steady; supply scarce; white $54, yellow $54.
Louisville: Demand slow; trend stronger; supply normal; $51, up $1.
Kansas City: Demand slow; trend steady; supply adequate; yellow $39 bulk, $3.50 more for sacks.

LINSEED OIL MEAL

Denver: Demand fair; trend good; supply tight; $93.50.
Omaha: Demand fair; trend very strong; supply scarce; 34% solvent $84.30, bulk; 32% old process $84.30, Omaha basis.
Ft. Worth: Demand fair; offerings light; carlots, 34% solvent $100, prompt; old process $105, pellets $2.50 premium; truck $101.
Minneapolis: Good demand continues for very tight supplies; only resale material available; January solvent $78.50 bulk, February $77.50 bulk; expeller $76.50, February-March, bulk.
Boston: Demand and supply light; solvent $87.
Wichita: Demand slow; supply ample; 34% $86.
Cincinnati: Demand poor; trend steady; supply adequate; new and old process $93.
Los Angeles: Demand good; trend much firmer; supply allocated; local production, 29% protein $69, nominal.
San Francisco: Demand fair; supply ample; $80.
New Orleans: Demand fair; trend steady; supply tight; $85.50@86.
Philadelphia: Demand fair; trend unsettled; supply light; 34% $99, nominal.
Portland: Demand good; supply tight; trend higher; $82.
Chicago: Demand good; supply scarce; solvent $81.50@82, expeller $81.50@82, basis Minneapolis.
Seattle: Demand fair; trend firm; supply limited (March only); 34% protein $90, car loads.
Louisville: Demand slow; trend strong; supply ample; old process $94.90, up 50¢; new process $96.40, up $2.50.
Kansas City: Demand fair; trend steady; supply tight, largely because of poor production; old process meal $78, bulk, Minneapolis, for spot; $76 for February-March; solvent $78@79 for spot, $77 for February.

MALT SPROUTS

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $48.
New Orleans: Demand fair; trend steady; supply adequate; $45@47.
Boston: Demand and supply limited; $42.50.
Chicago: Demand fair; supply adequate; No. 1 $45@46.

MEAT AND BONE MEAL

Ft. Worth: Demand fair; production light; meat and bone, 50% $110@112.50, f.o.b. or delivered Ft. Worth.
St. Paul: Slow demand; supply adequate; market continues firm because of lack of raw material; 50% meat and bone $115@117.50.
Boston: Demand and supply steady; $1.70 a protein unit; converted 50% $97.50.
Ogden: Demand firmer; supply average; $105 in 100-lb. bags.
Portland: Demand good; trend higher; supply limited; $1.85 a unit.
San Francisco: Demand good; supply ample; $1.85 a unit of protein.
Denver: Demand good; trend up; supply normal; 50% $102.50, truck lots, bagged; small lots $105.
Wichita: Demand moderate; supply sufficient; 50% $117.50, f.o.b. plant; 55%, no quotations, no offerings.
Cincinnati: Demand good; trend strong; supply fair; 50% meat and bone scraps $115.
St. Louis: Demand good; trend steady; supply tight; $116.
Omaha: Demand good; trend strong; supply tight; $120.
New Orleans: Demand good; trend strong; supply adequate; $106@111.
Los Angeles: Demand good; trend firm; supply moderate; 50% protein $1.90 a unit.
Chicago: Demand fair; supply tight; 50% protein $110@117.50.
Louisville: Demand fair; trend firm; supply ample; $115@120.
Seattle: Demand and supply good; trend firm; $85, ex-warehouse, 50% protein.
Buffalo: Demand good; trend steady; supply ample; 50% meat scraps $107.50 bulk, $112.50 sacked.
New York: Demand good; trend higher; supply tight; 50% $97.50, 55% $107.50, bulk; 50% $100.50, 55% $110.50, sacked.
Kansas City: Demand good; trend steady; supply more plentiful than tankage; 50% meat and bone scraps $112.50@113.

MILLFEED

Minneapolis: Demand fair at best as feed business fell off; adequate supplies; market a little weaker; bran $45.50@46; standard midds. $45.50@46; red dog $47.50@49.
Kansas City: Demand slower for bulk feeds, fair for sacked; trend steady to weaker on bulk feed; supply adequate; bran $43.75@44.50, shorts $44.75@45.50, sacked; bran $40.25@41, shorts $40.50@41.25, middlings $39.50@40.25, bulk.
Wichita: Demand good; supply adequate; basis Kansas City: bran $43.75@44.25, shorts $44.50@45; bran advanced 50¢ and shorts $1.75, compared with the preceding week.
Omaha: Demand good; trend steady; supply slim; sacked bran $45; sacked gray shorts $48; bulk standard midds. $45.
Ft. Worth: Demand good; offerings limited for immediate shipment; carlots, burlaps, prompt, bran $54@54.50; gray shorts $55@55.50; bulk middlings $53, delivered Texas common points; $1@1.50 higher on bran and $2@2.50 higher on shorts and $1 higher on middlings compared with previous week.
Chicago: Millfeeds moved higher in the central states during the week ending Jan. 21. A good demand, with offerings somewhat limited, produced the bulge. Some observers feel the market might go higher for a few days. Quotations: bran $51@51.50, standard midds. $50@50.50, flour midds. $52@53, red dog $54@55.
St. Louis: Demand fair; trend higher; supply ample; bran $49.25@49.75, shorts $50.25@50.75, sacked; bran $45.50@46, shorts $47.50@48, middlings $47.25@47.75, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; bran $56.50, middlings $54.50.
New York: Demand and supply good; trend upward; bran $62@62.50, standard midds. $62@62.50.
Boston: Demand good; supply spotty; bran $62.50, middlings $60.
Buffalo: Millfeed sales were very quiet last week. Supplies were available and bulk bran and middlings could work lower as supplies accumulate. Levels advanced from a week ago but most of the rise was lost. Sacked bran and middlings were comfortable but bulk was weak. Both bran and middlings ended 50¢ higher; red dog was unchanged to up $1. Quotations Jan. 21: bran $53.50, standard midds. $53.50, red dog $58@61. The bulk differential on both bran and middlings dropped from $7 to $4@5, mostly $5.
Philadelphia: Demand spotty; trend unsettled; supply fair; bran $61, standard midds. $61, red dog $64.
New Orleans: Demand good; supply light; trend strong; bran $55.50@56.25, shorts $54.50@55.25.
Memphis: Demand good; trend higher; supply scarce; wheat bran $52, gray shorts $53, standard midds. $53.
Louisville: Demand slow; trend slightly stronger; supply normal; bran $55.10, up 50¢; mixed feed $56, up $1.15; shorts $57.35, up $1.15; middlings $57.80, up 80¢.
Denver: Demand good; trend strong; supply limited; shorts $34.50, bran $34.50, mill run $34.50.
Seattle: Demand good; trend firm; supply fair; $46, common transit points, carlots.
Portland: Demand good; trend higher; supply limited; $45.
Ogden: Supply normal; to Utah and Idaho: red bran and mill run $51, middlings $56; to Denver: red bran and mill run $58, middlings $63; to California: red bran and mill run $58.50, middlings $63.50, f.o.b. San Francisco and Los Angeles.
Los Angeles: Standard mill run $56@57 bulk, good demand, firmer trend, supplies very tight; red bran $59@60 bulk, slow demand, steady trend, ample supplies.
San Francisco: Demand good; supply tight; millfeed $59; red bran $63.50.

MINERAL FEED

Sioux City: 50-lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

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TERMINAL ELEVATORS:

Kansas City, St. Louis, Chicago, Buffalo, Omaha, Toledo, Columbus, Fort Worth, Portland, Boston, Galveston, Enid, Minneapolis, Norfolk, San Francisco, Nashville, Louisville, Memphis, Houston

Ft. Worth: Demand improved; supply very limited; all-purpose granules $89, block $94; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $99, block $103; hog mineral phosphorus 3½% granules $38; phosphorus 2% $78 (all in 50-lb. paper bags).

Ogden: Supply average; $113 in 50-lb. blocks; $103, granular, 50-lb. bags.

Portland: Demand fair; supply ample; trend unchanged; $45.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

Denver: Demand good; trend steady; supply ample; $155.

Wichita: Demand good; supply insufficient; all-purpose with iodine, 50-lb. blocks $95, 100-lb. bags $90, f.o.b. plant.

Seattle: Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $85, ex-warehouse.

MOLASSES

Cincinnati: Demand fair; trend steady; supply adequate; 13¼¢ gal., New Orleans.

Denver: Demand fair; trend steady; supply ample; 13¼¢ gal., New Orleans; $22.66 ton.

New Orleans: Demand fair; trend steady; supply ample; 13½¢ gal., tank cars and trucks; 60-lb. customers' drums $8.85.

St. Louis: Demand slow; trend easy; supply ample; 13¢ gal., New Orleans.

Los Angeles: Demand good; trend steady; supply ample; $23 bulk, f.o.b. tank cars; $23.25 bulk, f.o.b. tank trucks.

Ft. Worth: Demand good; supply sufficient; blackstrap 13¾¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $30.20 ton, seller's market price on date of shipment.

Minneapolis: Fair demand; adequate supplies; market a little easier because of relaxing tension over Cuban situation; 13¼¢ gal., f.o.b. New Orleans.

Boston: Demand good; supply ample; 16½¢ gal. in tank cars.

San Francisco: Demand and supply good; $23, f.o.b. cars, Richmond, Cal.

Buffalo: Demand and supply good; trend steady; 16½¢ gal., f.o.b. Albany.

Memphis: Demand weak; trend steady; supply adequate; blackstrap 13¼¢ gal., tank car, f.o.b. New Orleans, and $30 ton, delivered Memphis, truck.

Seattle: Demand fair; trend easy; supply good; $23, f.o.b. Seattle, tank car lots or truck lots.

Louisville: Demand fair; trend easy; supply ample; 13¼¢ gal., tank car lots, f.o.b. Gulf ports, down ¼¢.

Atlanta: Demand fair; trend steady; supply limited; citrus $20@22.50, f.o.b. Florida producing points.

New York: Demand fair; trend steady; supply good; blackstrap 16¢ gal., tank cars, tank wagons, f.o.b. New York.

Kansas City: Demand slow; trend steady; supply adequate; 13@13¼¢ gal., tank car, New Orleans.

NIACIN

New York: Trend steady; $8 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Philadelphia: Demand slow; supply fair; pulverized white $57; Canadian oat feed $38; domestic oat feed $31.50.

Minneapolis: Demand fair; short supply of reground oat feed; steady trend; feeding rolled oats $78; feeding oatmeal $68.50; crimped oats $55; pulverized $47.50; reground $23.

Boston: Demand irregular; supply spotty; white pulverized $58; reground oat feed $25.

Portland: Demand good; supply ample; trend unchanged; rolled $63, ground $60, cleaned $63.

Ft. Worth: Demand slow; supply sufficient; oat millfeed $48.70; reground oat millfeed, 4% protein, sacked $32, 3% $29.70.

Cincinnati: Demand poor; trend steady; supply adequate; reground oats $20.50; pulverized white oats $49; rolled oats $83@86.

Los Angeles: Demand fair; trend easier; supply adequate; pulverized, local production $63.

Chicago: Demand fair; supply scarce; reground oat feed $21@21.50; fine ground feeding oatmeal $70; feeding rolled oats $79@80.

Seattle: Demand and supply fair; trend steady; $53, bulk, delivered truck lots.

Memphis: Demand fair; trend steady; supply scarce; 3½% protein, reground oat feed $29.75.

Louisville: Demand slow; trend strong; supply ample; reground oat feed $29.30, up 50¢; rolled oats $85.30, unchanged; feeding oatmeal $79.30, unchanged; pulverized white $54.30, up $1; crimped white $67.30, up $2.70.

OYSTER SHELL

Cincinnati: Demand fair; trend steady; supply adequate; $23.45.

Boston: Demand and supply steady; in paper $25.

San Francisco: Demand fair; supply ample; local $15, eastern $26.

New Orleans: Demand good; supply ample; trend steady; $21@21.50.

Portland: Demand good; trend unchanged; supply ample; western $34, eastern $38.50, granite grits $28, shell flour $24.

Los Angeles: Demand fair; trend steady; supply ample; $14.80.

Seattle: Demand and trend steady; supply good; eastern $35, carlots.

Louisville: Demand good; trend firm; supply normal; in 80-lb. paper $22.85; in 50-lb. paper $23.10; in 25-lb. paper $25.35.

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PEANUT OIL MEAL

Atlanta: Demand fair; trend steady; supply limited; 45% $64, f.o.b. Georgia mill points.

PEAT MOSS

San Francisco: Demand and supply fair; $3.65 bale.

Los Angeles: Demand fair; trend unchanged; supply adequate; Canadian, 6.1 cu. ft. bales $3.75.

Chicago: Demand good; supply tightening; $3.75@3.85, standard 7¼ cu. ft. bale.

Boston: Demand and supply steady; $3.15 bale in carlots.

Portland: Demand slow; trend lower; supply ample; $3 bale.

Philadelphia: Demand slow; supply light; $2.92 bale, f.o.b. pier.

Seattle: Demand poor; trend easy; supply good; $2.70 bale, truck lots.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.35; 200 lb. in 100-lb. drums $1.35; 100-lb. drums $1.38; 25-lb. drums $1.41, f.o.b. Cincinnati.

Chittenango, N.Y.: Demand good; supply adequate; 90% KI stabilized with calcium stearate, 200 lb. in 100-lb. cartons $1.35; 100-lb. cartons $1.36; freight prepaid to destination.

POULTRY BY-PRODUCTS

Ft. Worth: Demand fair; supply light; 55% protein $115, f.o.b. north Texas plants.

Boston: Demand good; supply tight; $108, f.o.b. shipping points.

Los Angeles: Demand and trend steady; supply ample; $1.70 a unit of protein.

Salisbury, Md.: Demand good; supply very limited; $100 bulk, f.o.b. producers' plants.

Atlanta: Demand strong; trend steady; supply limited; $110, f.o.b. Georgia and Alabama producing points.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gram in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more; freight prepaid or paid to destination.

New York: Trend steady; feed grade (in feed supplements) 4½¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand good for export, slow for domestic at present price; offerings light; carlots, rice bran $42@43, nominal, f.o.b. south Texas rice mills; hulls $2, f.o.b. mills.

Los Angeles: Demand better; trend firmer; supply more plentiful; bran, California production, high fat content $59.

San Francisco: Demand good; supply ample; bran $45; polished $49.

SCREENINGS

Ft. Worth: Demand almost nil; supply sufficient; ground grain $28.

Minneapolis: Supplies exceptionally light; slow demand; prices unchanged; lights $10@20, mediums $21@30, heavies $31@40; Canadian bulk $28.50; Canadian ground $36.50; flaxseed screenings $38; oil type flaxseed screenings $46, basis 15%.

Cincinnati: Demand fair; trend steady; supply adequate; malt house $33; malt sprouts $48; Canadian screenings $39 bulk, Cincinnati.

Chicago: Demand fair; supply adequate; ground grain screenings $35; Canadian bulk $28@29.

Buffalo: Demand and supply fair; trend steady to higher; ground, sacked $43, New York; unground, bulk $36.25, New York.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.88@25.
Memphis: $22.20@22.47.
Minneapolis: $25.92@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.27.

SORGHUMS

Ft. Worth: Demand good; offerings light; carlots, bulk, No. 2 yellow milo $2.32@2.34, delivered Texas common points.

Los Angeles: Demand steady; trend firmer; supply tighter; milo $2.50 cwt., bulk.

SOYBEAN OIL MEAL

Boston: Demand improved; supply fair; 44% $61, 50% $67.50, both bulk, f.o.b. Decatur.

Minneapolis: Slower demand as feed business fell off; adequate supplies; price off $1@2; 44% $54.50@55.50, bulk, Decatur; 50% $64, bulk, Decatur.

San Francisco: Demand good; supply tight; $91.

Ft. Worth: Demand good; supply sufficient; carlots, 44%, January $84.50, February-March coupled $84, April-September, any position $84; 50%, January $90.50, February-March coupled $89, April-September, any position $89.

Philadelphia: Demand good; trend unsettled; supply fair; 44% $65, bulk, Decatur.

Portland: Demand slow; trend lower; supply ample; $56, f.o.b. Decatur.

Ogden: Supply normal; $81@86.

St. Louis: Demand slow; trend easy; supply limited; 44% $75.

Wichita: Demand good; supply tight; 44% $78, 50% $86, f.o.b. Wichita.

Denver: Demand fair; trend steady; supply ample; $79.

Omaha: Demand slow; trend easy; supply ample; 44% $67.90, bulk.

Cincinnati: Demand fair; trend higher; supply adequate; $66, bulk, Decatur.

New Orleans: Demand fair; trend steady; supply adequate; $73@73.50.

Chicago: Buying of soybean oil meal literally dried up in the central states during the week ending Jan. 21. Offering prices as much as $1 lower than prices a few days ago are being ignored. Inventories are satisfied, feed demand has fallen off, and the price level got higher than some buyers were willing to go. Quotations: 44% protein soybean oil meal, bulk, unrestricted, basis Decatur $65; eastern restricted $63.50; 50% bulk, unrestricted $71; eastern unrestricted $69.

Los Angeles: Demand steady; trend firmer; supply ample; $89@89.50, bulk.

Kansas City: Demand fair; trend steady to weaker; supply adequate; meal for Kansas City and western shipment $59, bulk, Decatur; unrestricted $64.50.

Louisville: Demand slow; trend strong; supply moderate; $75.90, up $3.70.

Atlanta: Demand fair; trend weak; supply ample; 44% $78.

Seattle: Demand fair; trend steady; supply ample; $96, carlots.

Memphis: Demand good; trend steady; supply tight; prime 44% solvent $74.

TANKAGE

St. Paul: Slow demand; supply adequate; firm trend because of shortage of raw material; 60% digester $115@119.

Ft. Worth: Demand fair; supply extremely scarce; 60% digester $115, nominal, f.o.b. Ft. Worth.

Cincinnati: Demand good; trend steady; none available; 60% digester $115.

New Orleans: Demand fair; trend steady; supply ample; $122@127.

St. Louis: Demand good; trend steady; supply tight; $121.

Omaha: Demand good; trend strong; supply tight; $125.

Wichita: Demand moderate; supply sufficient; 60% $122.50, f.o.b. plant.

Chicago: Demand fair; supply tight; 60% protein $120@122.50.

Louisville: Demand fair; trend steady; supply good; 60% $120@125.

Kansas City: Demand fair here, better further north; trend steady; supply fairly tight; 60% digester $117.50@120.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand excellent; supply limited; 7¢ lb., f.o.b. north Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; any quantity in 100-lb. drums $1.50; in 25-lb. drums $1.55; freight allowed to destination.

New York: Demand and supply good; trend steady; 100-lb. drums $1.50 lb., 25-lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

Rochester, N.Y.: Demand and supply good; trend steady; 100-lb. drums $1.50 lb., 25-lb. drums $1.55 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.

WHEAT GERM MEAL

New Orleans: Demand and supply fair; trend steady; $95@98.

Chicago: Slow demand; ample supplies; market off $4, $68.

Buffalo: Demand and supply fair; trend lower; commercial grade $68, f.o.b. Buffalo.

FEED BILL

(Continued from page 1)

McDonald, Texas; L. E. Bopst, Maryland; William McFarland, Food & Drug Administration, Washington, D.C.; (feed manufacturers) A. J. Smith, McMillen Feed Mills; K. L. Wike, Allied Mills; J. A. Fouse, Quaker Oats Co.; J. T. Redwine, Quaker Oats Co.; and W. E. Glennon, AFMA.

Others present at the meetings included: (officials) Dr. F. W. Quackenbush, Indiana; Bruce Poundstone, Kentucky; R. E. Bergman, Minnesota; (industry) Leroy Schilt, Ralston Purina Co.; B. L. Gibbs, Hales & Hunter Co.; and Earl H. Hanson, Archer-Daniels-Midland Co.

COMMENT

(Continued from page 4)

Ga.) who is likely to find considerable support for his remark that the present farm program has proven its uselessness and that the situation demands drastic change.

But Sen. Talmadge would change the Brannan plan to incorporate most farm commodities, at the same time adopting the wheat growers' proposals to limit payments to the production sold in domestic markets for food purposes.

Many people will remember the angry reaction of Congress when Charles Brannan, then secretary of agriculture, presented his plan. It died a-borning, stricken down even by his colleagues on the Democratic side in both chambers. They feared the costs and the possible revolt of the urban taxpayer against the farm program.

Sen. Talmadge will not be alone in his drive for a new farm program based on proposals to dip into the taxpayers' pocket to "equalize" farmer income with that of the urban cousins. It remains for the reelected Wisconsin Democrat, William Proxmire, to re-introduce his omnibus bill to attain the farm millennium, on the questionable thesis that farmers everywhere are falling by the financial wayside. This claim is made despite the data available from official sources which reveal that farm income has been steadily rising—though, it is conceded, the cost of the things the farmer has to buy has risen also.

No small portion of that rising farm cost is attributed to the higher labor costs going into farm machinery and equipment.

However, the modified version of the Brannan plan must not be dismissed quickly as being without possibility of enactment. Hope has been expressed in some quarters that, if enacted, it will be vetoed.

A compensatory payment plan is not without some attraction to many strongly conservative elements of the distributive and merchandising trades.

As the "Rake's Progress" of the present farm program developed, the major markets concerned, the keystone of the marketing structure in grain, cotton and edible oils, saw a steady and ruinous decline in daily business. An attempt was made in the last session of the 85th Congress to eliminate futures market trading in onions. That attempt may be ominous for other trades if this Congress gets out of control and threatens to make such legislation all-embracing across the agricultural board.

A threat of this nature, little less than blackmail of exchanges to gain support for the compensatory payment plan, might work, if only because the result might be an immediate freeing of the big commodity markets for a full flowering of futures market trading.

It may be said in passing that the compensatory payment plan also implies rigid controls over production; limitation of payments to individual farmers, and the throttling of individual initiative as far as management of their own farms is concerned.

This would represent a direct antithesis for the U.S. farmer who, in the past 10 years, has proven his capacity to maintain, increase and reduce his unit of production cost within the limits of farm legislation. That legislation arose out of the emergency price stabilization law of 1942 which was primarily designed to give American farmers an economic cushion once World War II had ended.

Trading Corporation Plan

But not all the "madcap" ideas must be ascribed to the Democrats.

Thomas B. Curtis (R., Mo.) has given Congress his version of the short cut to Utopia by proposing the establishment of a billion dollar government trading corporation. This, he suggests, would give the U.S. wide freedom of action in competing with Russia on the economic front.

Indeed, such a measure would not lack support on the Democratic front. Rep. Hale Boggs (D., La.), chairman of the House Ways and Means Committee, sprang into the limelight to agree that some form of government trading corporation would prove a useful weapon in competing with Russia.

Since there is broad agreement on both sides of Congress that the agricultural surplus represents a weapon in the cold war, it is only a short step to contemplate more government invasion of trade.

It would appear that legislative concepts in 1959 will consist of short term judgments, geared to the national elections in 1960. Steadily being ignored is the economic aspect of farm legislation.

MICHIGAN FARMER GIVES UP FIGHT

DOWAGIAC, MICH. — Stanley Yankus, local farmer, is giving up his nationally publicized fight against the Department of Agriculture's wheat price support plan. Mr. Yankus announced that he is selling his farm rather than let "Washington tell me how much wheat I can raise." The poultryman has been assessed $4,561 in penalties during the past four years for raising wheat, in excess of quotas, which he fed to his 3,000 chickens.

Intentions to Raise Turkeys in 1959

State and division	—Number raised 1958*— Heavy breeds	Light breeds	Total	——Intended for raising in 1959—— Heavy breeds	Light breeds	Total	Total turkeys 1959 as % of 1958
	thousands			thousands			%
Maine	109	4	113	86	2	88	78
New Hampshire	131	2	133	128	2	130	98
Vermont	71	1	72	70	1	71	99
Massachusetts	462	10	472	445	8	453	96
Rhode Island	27	1	28	25	1	26	93
Connecticut	219	6	225	210	4	214	95
New York	611	10	621	475	9	484	78
New Jersey	162	9	171	179	9	188	110
Pennsylvania	1,213	154	1,367	1,309	168	1,477	108
North Atlantic	3,005	197	3,202	2,927	204	3,131	98
Ohio	2,404	659	3,063	2,748	870	3,618	118
Indiana	2,315	462	2,777	2,231	601	2,832	102
Illinois	968	113	1,081	955	107	1,062	98
Michigan	894	149	1,043	806	201	1,007	97
Wisconsin	2,629	122	2,751	2,886	120	3,006	109
E. North Central	9,210	1,505	10,715	9,626	1,899	11,525	108
Minnesota	9,125	1,215	10,340	10,422	1,446	11,868	115
Iowa	5,866	875	6,741	6,082	980	7,062	105
Missouri	3,038	188	3,226	3,438	229	3,667	114
North Dakota	682	24	706	787	25	812	115
South Dakota	621	46	667	754	48	802	120
Nebraska	1,032	20	1,052	1,082	20	1,102	105
Kansas	712	36	748	724	50	774	103
W. North Central	21,076	2,404	23,480	23,289	2,798	26,087	111
Delaware	108	397	505	108	516	624	124
Maryland	237	82	319	197	107	304	95
Virginia	2,003	4,401	6,404	2,008	5,281	7,289	114
West Virginia	486	968	1,454	406	968	1,374	94
North Carolina	1,551	184	1,735	1,359	110	1,469	85
South Carolina	881	25	906	705	20	725	80
Georgia	286	1	287	286	1	287	100
Florida	165	90	255	165	90	255	100
South Atlantic	5,717	6,148	11,865	5,234	7,093	12,327	104
Kentucky	343	24	367	229	16	245	67
Tennessee	170	17	187	146	13	159	85
Alabama	203	103	306	183	55	238	78
Mississippi	179	20	199	300	20	320	161
Arkansas	2,033	348	2,381	1,917	313	2,230	94
Louisiana	42	0	42	32	0	32	76
Oklahoma	873	182	1,055	866	251	1,117	106
Texas	3,368	400	3,763	3,468	500	3,968	105
South Central	7,211	1,094	8,305	7,141	1,168	8,309	100
Montana	19	1	20	19	0	19	95
Idaho	124	20	144	124	30	154	107
Wyoming	6	...	6	6	...	6	100
Colorado	1,242	13	1,255	1,577	9	1,586	126
New Mexico	69	6	75	76	6	82	109
Arizona	100	...	100	90	...	90	90
Utah	2,707	198	2,905	2,702	297	2,999	103
Nevada	2	...	2	2	...	2	100
Washington	508	7	515	543	7	550	107
Oregon	1,391	139	1,530	1,321	213	1,534	100
California	13,389	397	13,786	13,063	397	13,460	98
Western	19,557	781	20,338	19,523	959	20,482	101
U. S.	65,776	12,129	77,905	67,740	14,121	81,861	105

*Preliminary.

TURKEY

(Continued from page 1)

last year. Compared with last year, expected decreases of 14% in the south Atlantic, 4% in the east north central and 3% in the south central region are partially offset by expected increases of 5% in the north Atlantic region and 4% in the west north central states. Growers in the West plan about the same number of bronze and other heavy turkeys as was raised last year.

Light Breeds

Growers of light breeds expect to produce 14,121,000 turkeys, compared with 12,129,000 turkeys in 1958, an increase of 16%. Increases are planned in all regions. The intentions show increases of 26% in the east north central, 23% in the West, 16% in the west north central, 15% in the south Atlantic, 7% in the south central and 4% in the north Atlantic states.

The report pointed out that the number actually raised this year may vary from the Jan. 1 intentions, with the difference depending on growers' reaction to price of feed, supply and prices of hatching eggs and poults and the sale of turkeys remaining in growers' hands. In 1958, 4% fewer turkeys were raised than intended on Jan. 1.

During 1958, there was an ample supply of poults throughout the hatching season. Feed supplies were plentiful. Turkey prices received by farmers averaged about the same as the previous year, and the turkey-feed price relationship was slightly more favorable to producers in 1958 than during 1957.

FIRE GUTS N. Y. MILL

SYRACUSE, N.Y. — Fire gutted Wright's Feed Mill, a 158-year-old landmark near the center of the village of Manlius, N.Y. Total damage to the mill, equipment and stock was estimated at $55,000 by the owner, Daniel Wright of Manlius. No injuries were reported.

Columbus Feed Club Sets Meeting Date

COLUMBUS, OHIO—A meeting of the Columbus Feed Club has been set for 7:30 p.m. on Feb. 2 at the Southern Hotel here. The meeting has been entitled "Prospective Candidates Nite."

C. D. Fales, Ohio divisional sales manager for Ralston Purina Co., will talk on "People Are Important."

Members are asked to invite friends of the feed industry to this meeting, said Otto Groene, program chairman.

A social hour will start at 6:30 p.m.

Speaker Discusses Effects of Seaway

LEWISTON, MAINE—A possible revolution in the field of feed distribution was predicted by John E. Bressette, director of transportation for Wirthmore Feeds, Inc., Waltham, Mass., in an address at the Agricultural Trades Show in the Lewiston Armory recently.

He said the opening of the St. Lawrence Seaway next spring indicates that shipment of grain direct to Maine ports may become a reality, with a 20% saving for farmers in the area. The main difficulty, he pointed out, would be the construction of harbor facilities and storage buildings.

It would be the first time in history that grain has been brought into Maine by water, and shipments from along the Eastern Seaboard would also be possible once facilities were provided. The suggested deep water ports in this state are Searsport, Bath and Rockland. The Wirthmore official said Rockland is centrally located as far as market depots are concerned.

The St. Lawrence Seaway will be closed about five months of each year, and the commission reportedly plans to erect huge storage elevators at the mouth of the river.

Water shipment of feeds to Maine admittedly would require a huge investment in facilities, and to counteract the plan, it is reported that the Maine Central Railroad is considering lower rates so that the proposed water routes would not be practical.

Establishes Resort

KISSIMMEE, FLA.—R. H. Myers, Myers & Clark Co., Ashland, Ky., has developed a mobile home resort in this central Florida location. The resort, El Tonteria ("the folly"), has been established on property described by Mr. Myers as "jungle" which he acquired about a year ago.

Extensive improvements have been made on the property, and Mr. Myers, a fifth generation miller, is attempting to make the resort particularly attractive to grain men and millers. It is located 17 miles from Orlando.

DEAN A. MARTIN DIES

NEW CASTLE, IND. — Dean A. Martin, 68, retired grain elevator operator, died recently in his home at New Castle after a long illness. For several years, Mr. Martin owned and operated the New Castle Elevator now owned by the Farm Bureau Co-op.

Dr. W. N. McMillen

Dr. L. C. Cunningham

ADA CONVENTION SPEAKERS—Two of the speakers scheduled for the American Dehydrators Assn. convention to be held Jan. 28-30 at the Shamrock-Hilton Hotel, Houston, Texas, are Dr. W. N. McMillen, director of feed nutrition, A. E. Staley Manufacturing Co., Decatur, Ill., and Dr. L. C. Cunningham, professor of farm management at Cornell University, Ithaca, N.Y. Dr. McMillen will discuss swine nutrition as part of the Jan. 29 program, and Dr. Cunningham will talk on the potential for dehydrated alfalfa in formula feed the following day.

Lloyd E. Workman

VICE PRESIDENT—Lloyd E. Workman, director of the Supersweet Feeds division of International Milling Co., Minneapolis, has been elected a vice president of the company. (Feedstuffs, Jan. 17).

International Milling Elects Officers

MINNEAPOLIS — International Milling Co., Minneapolis, elected officers for the coming year at a recent board of directors meeting.

Lloyd E. Workman, director of the company's Supersweet Feeds division, was named a vice president of the firm. He has been in charge of the division since it was formed in 1952. (Feedstuffs, Jan. 17.)

Philip Von Blon, general sales manager for bakery and durum products, was also elected a vice president. Officers who were reelected are Charles Ritz, chairman of the board; Atherton Bean, president; John B. Bean, W. H. Hagenmeyer, John A. Hendrickson, Wayne T. Kirk, Malcolm B. McDonald, William G. McLaughlin, P. Norman Ness, and John Tatam, vice presidents; Harry Howlett, secretary and general counsel; Roy B. Jewett, comptroller and assistant treasurer; Milton W. Anderson, assistant secretary and treasurer, and L. R. Verschoyle, assistant comptroller. Mr. McDonald is also treasurer of the company.

Efficient Pork Raising Is Meeting Theme

ST. JOSEPH, MO.—The need for increased efficiency in order to obtain economical production of pork will be the theme of a special event the St. Joseph Feed & Supply Co. is planning for farmers in northwest Missouri and northeast Kansas to be held here on Jan. 26.

The affair will be staged at the Frog Hop Ballroom on the Belt highway just east of St. Joseph. An attendance of 500 is anticipated.

"The theme is," said Larry Ehlert, president of the company, "'Are we going to permit a pig to make a hog of himself cheaply?' Basically we want to show that hog producers in this area must become efficient producers if they are not to lose their business to the big producers."

The morning session of the event will begin at 9, Mr. Ehlert said, with Dr. E. E. Clore, Greenwood, Ind., a veterinarian, discussing the subject "What Integration Is Costing Middlewestern Hog Men."

A roast pig dinner is slated at noon. In the afternoon John Hendricks, West Liberty, Iowa, will talk on modern hog production methods. Mr. Hendricks has been raising hogs on concrete since 1927. Much of his talk will be devoted to this subject as well as recent developments aimed at improving hog production.

Twelve commercial firms have signed up for space at the one-day event.

CHICAGO FEED CLUB OFFICERS—Officers were installed and past presidents honored at the meeting of the Chicago Feed Club held recently at the Bismarck Hotel in Chicago. Officers shown in the first picture (left to right) are: William E. Huff, Morton Salt Co., secretary; George E. Fuhr, Spencer Kellogg & Sons, Inc., Chicago, president; Don L. Huffman, Nellis Feed Co., vice president; Robert H. Griffiths, Allied Mills, Inc., retiring president, and Charles H. Hubbell, feed consultant, treasurer. Past presidents grouped around the table in the second photo (left to right) are: F. M. Becker, Farm Bureau Milling Co., Hammond, Ind.; Joseph G. Nellis, Nellis Feed Co.; E. G. Young, Illinois Farm Supply Co.; Harris T. Lyon, Allied Mills, Inc.; Gladwin A. Read, Gladwin A. Read Co.; R. C. Becker, Cereal Byproducts Co.; John J. Zima, Kraft Foods, and Joseph E. Nelson, Packing House By-Products Co.

MARYLAND

(Continued from page 6)

cerned with potassium, zinc and unidentified factor sources.

Others from the poultry department presenting papers will be D. F. Middendorf, N. V. Helbacka and R. D. Creek. Drs. Middendorf and Helbacka will discuss protein levels for laying hens and factors affecting egg quality. Dr. Creek will present data on the use of zinc in practical turkey diets, and studies of the perosis complex.

Speakers from the department of animal husbandry will include Drs. E. C. Leffel and P. G. Young. Dr. Leffel will discuss rumen studies and Dr. Young, the subject of hormones in fattening swine. Dr. Young recently joined the University of Maryland staff. Prior to this, he was employed at Ohio State University.

A highlight of the program this year will be the luncheon talk by Dr. Horace J. Davis, former attache to the American embassy in Moscow, on "Agriculture in Russia."

The registration desk will be open from 7 to 10 p.m. Wednesday, the evening prior to the conference. Guests who arrive during or before this time are requested to register then if possible to avoid the last minute rush. Any one interested in livestock or poultry feeding is invited to attend, says Dr. Richard Creek, conference chairman.

California Conference To Include Talks On Livestock Feeding

BERKELEY, CAL. — Animal and human nutrition and feeding will be featured at the 1959 Farm and Home Conference at the Davis Campus of the University of California Jan. 30-31.

The program will include Animal Husbandry Livestock Day meetings—individual meetings will concern beef and dairy cattle, swine, sheep and horses—and a program on home economics for the women. Meetings on range and pasture, soil and water management, conservation and beef feedlot problems are also planned.

The conference will open with a panel discussion on the beef feedlot disease program. Dr. P. C. Enge, extension veterinarian at the university, will preside, and discussions will be held as follows: "The Importance of Veterinary Advice in Feedlot Operations," by J. R. Algeo, nutritionist, Sinton Brown Co., Betteravia, Cal.; "How Leptospirosis and Anaplasmosis Can Affect Feedlot Operations," by Dr. J. A. Howarth; "The Value of Vaccines and Bacterins in a Feedlot Operation," by Dr. John B. Kendrick, and "What to Expect from Antibiotic Additives in Your Operation," by Dr. Blaine McGowan. Drs. Howarth, Kendrick and McGowan are with the veterinary medicine department of the university.

Concurrently there will be two other panels on sheep production and dairy production. The former will be conducted by W. C. Weir, department of animal husbandry. The dairy program will be presided over by C. L. Pelissier, extension dairy specialist.

During the afternoon, Dr. Weir will discuss the subject, "What Do Sheep Actually Eat on the Range," as part of a panel on the range and pasture program.

A swine panel during the afternoon will consider such problems as a forecast of the swine industry in California during 1959, and "High Levels of Alfalfa Meal as a Source of Energy." L. W. Feldmiller, Valley Livestock Marketing Assn., will give the forecast, and Dr. Hubert Heitman, Jr., department of animal husbandry, will discuss the feed program.

The problems of feeding horses will be discussed Jan. 31. Most of the day will be devoted to aspects of livestock production other than feeding.

New Jersey Feed Group to Hold Meeting

LAKEWOOD, N.J.—The New Jersey Feed Industry Assn. will meet at the Hotel Stacy Trent in Trenton, N.J., Jan. 29.

Among the program topics will be a discussion by Edward Karpoff, statistician for the statistical and historical research branch, Agricultural Marketing Service. Mr. Karpoff will talk on "Factors Affecting the Location of Production for Eggs and Poultry."

Vinton N. Thompson, executive director of the rural advisory committee, New Jersey Department of Agriculture, will cover "Zoning and Taxation Problems Affecting Poultry and Dairy Production in New Jersey."

A business meeting and the election of five new directors will follow.

Peoria Board of Trade Names Officers for '59

PEORIA, ILL—New officers for the Peoria (Ill.) Board of Trade were announced recently following elections for the year 1959.

H. H. Dewey, W. W. Dewey & Sons, was named president. Other new officers are R. T. McIntyre, Cargill, Inc., first vice president; Fred Eyrse, Corn Products Co., second vice president; Fred Blossom, Central National Bank & Trust Co., treasurer, and Ira Johnston, secretary.

Directors for the coming year are John Bell, Smith Benham, H. H. DeVore, Joseph Horn, Roger Larkin, R. F. Mueller, A. R. McClintock, W. E. Nagle, K. L. Oltmann and J. R. Schaber.

FEED FIRM CHARTERED

TOPEKA, KANSAS—Partridge (Kansas) Milling Co., Inc., has been granted a charter. Arthur T. Symns, Hutchinson, has been named resident agent. Capitalization of $40,000 was authorized.

Warehousemen's Group To Meet in California

SAN FRANCISCO — Two officers of the Grain & Feed Dealers National Assn. will discuss problems connected with the warehousing of feed and grain products at the 38th annual convention of the California Warehousemen's Assn. in Monterey, Cal., Jan. 26-28.

A. E. Oliver, executive vice president, and Madison Clement, president, will give a report to an expected audience of 150 warehouse owners during the morning sessions Jan. 27 at the Casa Munras Hotel. Discussions throughout most of the day will be devoted to the feed and grain industries.

A panel discussion Jan. 27 will deal with warehouse construction and modernization for handling feed and grain. A second panel will consider the bulk storage and handling of beans. The storage and sales programs of the Commodity Stabilization Service of the U.S. Department of Agriculture will be taken up by another panel.

The fumigation of grain warehouses will be discussed the morning of Jan. 28 by John O'Brien, Cardinal Chemical Co., San Francisco, and R. K. Williams, Dow Chemical Co., Oakland. Their presentation will be followed by a discussion of state bonded warehouses by Harry E. Spires, California State Department of Agriculture.

The first day of the conference, Jan. 26, will be devoted to addresses by C. L. Fox, president of the California Public Utilities Commission, and James Silliman, former speaker of the California State Assembly, who will discuss the legislative outlook in the state for 1959. Two sanitation specialists will talk on warehouse sanitation, and will give a report on the year-old Sanitary Advisory Commission of the California Warehousemen's Assn. They are Jim McWilliam and Bob Edwards, who have been associated with the late V. Keith Giddings, sanitation consultant, Castro Valley, Cal. Mr. McWilliam and Mr. Edwards are substituting for Mr. Giddings, who was to have addressed the meeting, but died suddenly in December.

In conjunction with this convention, there will be a regional meeting of directors and officers, and past presidents of the Grain & Feed Dealers National Assn. on Jan. 26, following which the feed men will meet jointly with warehouse operators.

REPORT ON BRUCELLOSIS

SALEM, ORE.—Dr. A. G. Beagle, in charge of federal veterinarians for Oregon, reports that Oregon's brucellosis eradication program is "on schedule" toward reaching the statewide accreditation deadline of June, 1959. He reports a total of 27 counties and the Warm Springs Indian reservation have met the required tests to date while one county is within one herd of clearing the disease-free hurdle and eight remain to be completed.

MONTANA

(Continued from page 6)

State, "Concentrate - Roughage Ratios in Completely Pelleted or Mixed Hay and Grain Rations for Fattening Lambs" and "Supplementing Barley Rations for Fattening Swine"; Allan Galt, Spanish Forks (Utah) Elevator, "Management of Swine"; W. F. Garrison, Glen, Mont., "How I Manage My Beef Cattle Operation"; Dr. C. F. Chappell, Eli Lilly & Co., Indianapolis, "Feeding Diethylstilbestrol, Tapazole and Antibiotics to Beef Cattle."

Integration

Other speakers will be Robert Wetherell, Montana feed control official, "New Look at Feed Control Work"; Oakley M. Ray, American Feed Manufacturers Assn., Chicago, "Impact of Integration"; Dr. Karl Swingle, Montana State, "Present Status of the Water Belly Problem"; Dr. Morris Erdheim, Dawe's Laboratories, Chicago, "The Veterinary Practitioner and the Feed Man." There also will be a panel discussion of veterinary-feed industry problems by Dr. Erdheim, Dr. E. A. Tunnicliff of Montana State and Dr. W. H. Burkitt of Montana Flour Mills Co., Great Falls, Mont.

A banquet will be held the evening of Feb. 9 at the Baxter Hotel. The speaker, Dr. D'Albert Sampson of Montana State, will provide "A Look Into Russia."

Another feature of the conference will be a showing of the Midwest Feed Manufacturers Assn. film "New Horizons."

MARKETS

(Continued from page 2)

Millfeed sales were very quiet. Sacked bran and middlings were comfortable but bulk was weak.

Running time of formula feed manufacturers averaged 40 hours last week. In the previous week mills worked 40 to 44 hours, with some putting in 48 hours.

Southeast

Feed business in the Southeast for the past week has been reported as being very good in some sections while a little on the slow side in others. Mills report their running time about steady. The north Georgia broiler growers are very optimistic about the broiler market, which is now 17-18¢ lb. f.o.b. the farm, which gives the growers a slight profit. Many believe that prices will improve in the very near future.

Cold weather over the weekend did not create any increased demand for feed ingredients. Most of the ingredient buyers continue to buy the materials they need on a hand-to-mouth basis.

Cottonseed and soybean meal showed signs this week of weakening, and many believe that prices are coming down. Many oil mills this week have been offering fairly large quantities of oil meals for February-forward at slightly reduced prices, with very few buyers interested in committing themselves for future months at the present asking prices. Most ingredient buyers believe there will be further reduction in prices.

The demand for corn has been very good, which has resulted in an advance of 2¢ bu. Many Florida citrus producers who do not have storage space reduced their price on dried citrus pulp last week to $35. The ones who have sufficient storage space are warehousing their pulp, hoping for better prices after the production season is over.

Central States

The long-expected slackening in the sales pace of formula feeds oc-

curred during the week ending Jan. 21. Observers feel the slowdown was inevitable, since feed pipelines have been filling up for some time. This week it seemed as though all classes of the trade got filled up at once, and buying levelled off or declined.

The sharp run-up in feed prices also is thought to have been instrumental in slowing the buying pace. This week the price structure eased somewhat, reflecting the slower demand. Inventories for the most part are filled.

For the short term, feed spokesmen say, the outlook is good, since feed already ordered will have to be mixed and fed. Later, however, the hog feed situation does not look strong. Last fall's pig crop is heading for market, and the large numbers are expected to depress the market.

South Central

Formula feed sales were slower last week, causing most plants to shorten their operating schedules. Nearly all overtime runs were eliminated and some second shifts were cut back, but most plants were able to keep going for five days.

To a large extent, the reduction in sales can be traced back to the heavy purchases just before the end of the year. It was generally recognized at the time that some business was being borrowed from the future and would have to be paid for later. Another contributing factor to the downturn was the hazardous driving conditions on the highways in the nearby area. Sleet and freezing rain discouraged all trips to pick up feed.

Feed manufacturers indicate that price lists will be unchanged. Soybean meal prices are about the same and meat scraps are up as well as alfalfa meal.

Ohio Valley

Near-zero weather returned early this week to the Ohio Valley, but by mid-week had moderated to freezing rain that delayed deliveries of feedstuffs from area mills and made it necessary for many Valley farmers to use greater quantities of whole grains because of the increasingly short supplies of concentrates. It is generally agreed that this winter has been the worst in more than a decade as far as weather conditions have been concerned, and it presently appears likely that the low temperatures will continue well into next month, at least.

The extremely cold weather has, of course, some favorable aspects. For one thing, the carryover of more-than-average surpluses of grains from last fall's harvest has by now been largely depleted because of the prolonged spell of indoor feeding that has been necessary during the last month or more. Thus, by the time spring weather finally arrives, there likely will be but little, if any, farm grain or silage remaining available. The result will be an anticipated continuance of the excellent volume of formula feed business that manufacturers and dealers have been enjoying through this winter.

Receipts of animals at area stockyards continue in short supply, with the result that wanted byproducts remain in such short supply that some renderers are now refusing to book advance orders, pending the filling of previous bookings. Most other ingredients are currently in adequate supply.

After having been in the doldrums, price-wise, for many months, the quotations for fryers and other poultry advanced this week 1@2¢ lb., to inject a more cheerful note for suppliers. Prices for cattle, hogs and sheep likewise tended upward at area stockyards, due to inadequate supplies resulting from the cold and stormy weather.

Most area mills were operating full five-day schedules this week, with some plants reporting considerable overtime in efforts to keep deliveries reasonably in line with orders.

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Mountain States

Formula feed dealers the past week said that the week's sales volume has been very steady compared with the same time a year ago. They all claim it is up about 25%.

Getting most demand in this area the past week has been cattle feed, which has been about steady in comparison with last week's business.

Most of the feed being purchased at the present time is for immediate sale and very little for inventory buildup.

Pacific Northwest

Feed ingredient quotations maintained a steady to strong trend during last week's feed market trading with tight supplies of some important items continuing to be a supporting factor.

The overall demand ruled fairly good with trade sources reporting limited offerings of some feedstuffs were readily taken by mixers. There continued to be increased buying to cover forward requirements extending into March delivery.

Supplemental feeding remained heavy despite the moderate winter temperatures in most western Oregon and Washington sections where above average rainfall was reflected by increased inside livestock and dairy cattle feeding.

Formula feed trading carried a continued good demand and featured a volume amount of poultry and dairy feed sales.

Meat and bone meal listings continued their upward climb and closed $7.50 to $10 ton higher. Linseed meal values advanced $5 ton despite relatively slow trading.

There continued to be a moderate feed grain movement at mostly steady to firm prices. Quotations for whole corn averaged 25¢ higher than one week ago while listings for other feed grains held steady and unchanged.

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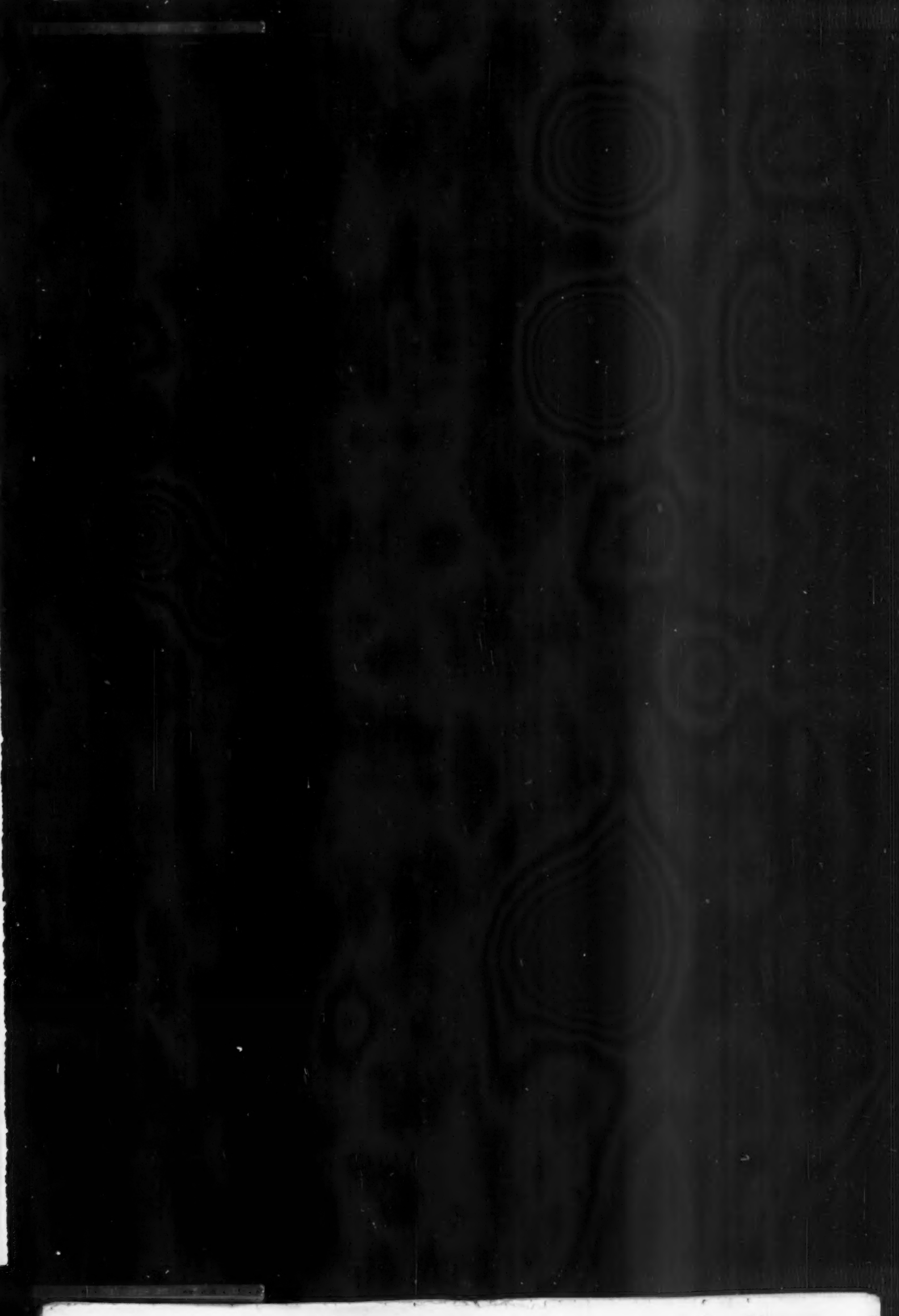
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